SELF STUDY REPORT 2017

Submitted to

National Assessment & Accreditation Council

Bengaluru

Bapuji Educational Association ®

Bapuji Institute of Engineering & Technology

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Section A

Part –I

Institutional Data

PREFACE

PREFACE

"We want that education by which character is formed, strength of mind is increased, the intellect is expanded, and by which one can stand on one's own feet." **- Swami Vivekananda**

The form of education needed today is not just to create an informed set of individuals; instead develop individuals- with character, commitment, conviction, courtesy and courage, who are cultured, who can shoulder the responsibility of taking the nation forward and making it stronger than ever before. A true broad based education prepares students for life, without losing their areas of specialization and competence. **Bapuji Institute of Engineering and Technology (BIET)** has understood the importance of broad based education and has created a conducive environment for the students to blossom into complete individuals. BIET believes in inculcating right attitude in the minds of young students and develop them as individuals who have the innate desire not just to succeed in their own lives but also to contribute meaningfully to societal development in all possible spheres.

BIET is a prestigious technological institution run by **Bapuji Educational Association (BEA).** BEA is a conglomerate of over 40 educational institutions across the city of Davangere. The Association was established in the year 1958 with the inception of a first grade college in Davangere. Two medical colleges, two dental colleges, **an engineering college -Bapuji Institute of Engineering & Technology (BIET)** and numerous other colleges are constituents of this association. BEA is one of the oldest and most prestigious educational associations in Karnataka. Its objective is to cater to the needs of those who aspired for higher education. All the philanthropists in and around Davangere interested in helping the cause of education volunteered their service whole heartedly in building and promoting this association. Though imparting higher education to the aspirants was the association's main objective, it gave attention to start a wide range of schools and colleges according to the situational needs and demands. There are a number of philanthropists on the board of BEA who have been rendering selfless service to the cause of education.

Bapuji Educational Association

Dr.Shamanur Shivashankarappa is a doyen in the field of education. His contribution to the cause of higher education is immense and invaluable. Under his leadership, BEA has been able to make an indelible impression in the educational map of this country. He is the Member of Legislative Assembly of Karnataka and was the former minister of Horticulture and APMC, Govt. of Karnataka. He is a visionary, a guiding force and the nucleus of all developmental activities in the association. His commitment to education is worth emulating.

Sri S.S. Mallikarjun is the honorable Minister for Horticulture and APMC, Govt. of Karnataka. He has been relentlessly working for the welfare of the general public, particularly the downtrodden and economically weaker sections of the society. He is an icon of the youth of Davangere and is highly innovative and progressive in his thinking. His contribution to the overall development of the city of Davanagere in terms of drinking water supply, restoration of Kundawada lake, laying of concrete roads, sports, supply of electricity is immense and invaluable.

Sri A.C.Jayanna hails from a philanthropic family and has been rendering selfless service to the cause of education through Bapuji Educational association. His foresight and proactive approach has resulted in BIET establishing itself as one of the top twenty engineering institutions in the state of Karnataka.

Today there are more than forty educational institutions right from LKG to PG, Diploma to Engineering, Nursing to Medical, BBM to MBA, B.C.A to M.C.A. run by BEA. The names of a few of those institutions are given below:

J.J.M. Medical College
Bapuji Dental College and Hospital
College of Dental Sciences
Bapuji Pharmacy College
Bapuji School of Pharmacy
Bapuji College and School of Nursing
S.S. Institute of Nursing Sciences
Bapuji Polytechnic
R.L. Law College
B.E.A. College of Education
Bapuji Institute of Management Studies
D.R.M. Science College
A.V.K College for Women
A.R.G. College of Arts and Commerce
Smt. Parvathamma Shamanur Shivashankarappa Residential School
S.S. Genaral Hospital
S.T.J. Rural Hospital, Channagiri

Bapuji Institute of Engineering & Technology (BIET), started in the year 1979, has been in the forefront imparting high quality technical education. State of the art infrastructure in all branches of engineering, qualified and dedicated staff, highly conducive environment for teaching-learning and a lush green campus with an area of 3,75,550 sq. m. are the hallmarks of this professionally managed institution. BIET is one of the most sought after institutions in south Karnataka and is rated as one of the top twenty technical institutions in the state of Karnataka.

BIET has an Industry-Institute Partnership Cell (IIPC) striving hard to bridge the gap between Industries & Institute, to foster effective interaction between Industry and Institute to impart meaningful education and to promote industrial consultancy & entrepreneurship. Many of the faculty members have R & D projects sponsored by leading National and International agencies. Quite a number of faculty members are active industrial consultants and are engaged in development of software, processes, prototypes, and products. Several products have already been developed and commercialized by the Product Development Center (PDC) of the institute. Silk hank dyeing machine, Fabrofeel, Vacuum pump, Steady rest for grinding applications, Thermal cutting of glass, Pedal operated silk reeling machine, Sow box for power loom, Silk knitted products, Bio fuels, Health care research, environmental impact assessment etc. are some of the products and processes developed by the institute.

The alumni of this institute occupy very good positions in business, industry, R&D and academia in India and abroad. The Institute has consistently produced outstanding engineers who have excelled in their career and occupied responsible position in some of the best known enterprises in India and across the globe. BIET has already produced some remarkably good entrepreneurs over the years and has all the necessary infrastructure and mindset to incorporate an incubation center in the institute to provide an excellent platform for students with innovative ideas and entrepreneurial qualities to blossom into real and worthy entrepreneurs.

BIET has already been accredited thrice by National Board of Accreditation, New Delhi, during the year 2000, 2004 and 2008. 11 UG programs and 1 PG program were accredited during the last accreditation process.

BIET has always been lending itself to evaluation by national accrediting agencies and is all set for the first cycle of Accreditation by NAAC. We deem it a privilege to submit our Self Study Report (SSR) to NAAC, Bengaluru. The SSR is divided into two parts. The first part includes the preface, executive summary, SWOC analysis of the institute, profile of the institute, criterion wise analytical reports and evaluation reports of 10 UG programs and 8 PG programs. The second part consists of annexure consisting of all supporting data. To come out with a report of this quality, a highly focused, consistent and untiring effort has been there from the proactive management, drafting committee, heads and faculties of various departments. I take this opportunity to place on record my gratitude to the management, the members of drafting committee, steering committee, and the newly constituted Internal Quality Assurance Cell (IQAC) for sharing the responsibility of drafting the SSR.

I am sure, BIET will scale new heights in the years to come, as we have the commitment and capability to steer the institution to create an indelible impression in the domain of engineering education in this country. We firmly believe that the output from this institute will take on the onerous task of building a strong and a vibrant India.

Dr. S. Subrahmanya Swamy
Principal

Steering committee	
Dr. S. Subrahmanya Swamy	Principal
Prof. Y. Vrushabhendrappa	Director
Dr. K. Sadashivappa	Dean -Academic
Dr. K. Murugesh Babu	Dean -Public Relations
Dr. B.E. Rangaswamy	Dean -R & D
Dr. G.P. Desai	Head -Chemical Engg.
Dr. M.S. Nagaraj	Head -E & E Engg.

List of abbreviations

AICTE	All India Council for Technical Education
ASCE	American Society of Civil Engineers
BEA	Bapuji Educational Association
BEL	Bharat Electronics Limited
BESCOM	Bengaluru Electricity Supply Company
BIET	Bapuji Institute of Engineering & Technology
BPL	BIET Premier League
CAT	Common Admission Test
CME Block	Civil Mechanical Electrical Block
DDC	Dewey Decimal Classification
DHT	Direct High Tension
DST	Department of Science & Technology
DTE	Directorate of Technical Education
EDUSAT	Educational Satellite
ERP	Enterprise Resource Planning
FACE	Focus Academy for Career Enhancement
FAER	Foundation for Advancement for Education & Research
FDP	Faculty Development Programme
GATE	Graduate Aptitude Test in Engineering
HOD	Head of the Department
HR	Human Resource
IA	Internal Assessment
ICT	Information & Communication Technology
IEEE	Institute of Electrical and Electronics Engineers
INFLIBNET	Information Library Network
IQAC	Internal Quality Assurance Cell
IQAS	Internal Quality Assurance System
ISRO	Indian Space Research Organizational
ISTE	Indian Society for Technical Education
KSCST	Karnataka State Council for Science & Technology
LCD	Liquid Crystal Display
LIC	Local Inquiry Committee
MBA	Master of Business Administration
MCA	Master of Computer Application
MOU	Memorandum of understanding
NAIN	New Age Incubation Network
NB Cup	Neelamma Belagavi Cup
NBA	National Board of Accreditation
NCC	National Cadet Corps
NGO	Non Governmental Organization
NPTEL	National Programme on Technology Enhanced Learning
NSS	National Service Scheme
OFC	Optical Fiber Cable
OPAC	Online Public Assess Catalog
PCO	Public Call Office
QAC	Quality Assurance Cell
RAC	Research Advisory committee
SMS	Short Message Service
TCS	Tata Consultancy Services
UGC	University Grants Commission
VGST	Vision Group of Science & Technology
VTU	Visvesvaraya Technological University
YRCW	Youth Red Cross Wing

**“Education is the manifestation of perfection
already existing in man”**

-Swami Vivekananda

Executive Summary, SWOC Analysis and Future Plans of The Institute

Bapuji Institute of Engineering and Technology

BIET, started in the year 1979, is one of the most sought after institutions in south Karnataka and is rated as one of the top twenty technical institutions in the state. Institute is affiliated to Visvesvaraya Technological University (VTU), Belagavi. At present, it offers 10 UG and 8 PG programs. BIET has already been accredited thrice by National Board of Accreditation, New Delhi, during the year 2000, 2004 and 2008. Institute is recognized by AICTE and University Grants Commission, New Delhi, under 2f. National River Conservation Directorate (NRCD), Ministry of Environment and Forest, Govt. of India recognized the institute as **Reputed Scientific Institute.** Infosys recognized BIET as Advanced Partnership College & appreciated BIET as "A Model College for others across the country" under Campus Connect Programme**.** IBM has recognized Dept. of CS&E as "Centre of Excellence".

VISION

"Our vision is to be in the forefront of technical education at the undergraduate, postgraduate and doctoral levels besides serving society by undertaking various industrial and society related activities."

MISSION

"Our mission as an institute is to provide the best possible technical education to students besides inculcating in them the values of various virtues, which will enable them to become lovable citizens of the country."

QUALITY POLICY:

Inculcating the concepts of discipline, punctuality, and ethics into thinking process of students to promote their overall growth.
Motivating teachers to impart knowledge by continuous interaction with students within the framework of rules and regulation of the university.
Carrying out objective evaluation of the performance of students.
Enhancing the academic skills of the faculty through faculty development programmes.
Creating an atmosphere conducive to research in the campus.

OBJECTIVES:

To become one of the most progressive and innovative knowledge centers.
To foster effective interaction between Industry and Institute and to impart world class education in Engineering, Management and Research.
To promote Industrial consultancy, entrepreneurship, conduct courses and training programmes in collaboration with Industry.
To develop commercially feasible technologies having societal relevance.
To enter into international exchange programmes with prominent educational institutes and Universities.
To nurture students as citizens with moral, ethical and social values so as to discharge their obligations towards the industry and society.

Criterion I: Curricular Aspects

Curriculum is the most important and pivotal factor which has the highest influence on the quality of the output of an engineering institution. Feedback from the stake holders and a certain degree of flexibility in framing the curriculum can go a long way in meeting the ever changing demands of the industry.

The institute offers 10 undergraduate programs and 8 post graduate programs with an annual intake of 820 for UG and 360 for PG. Admissions are made based on merit as per the guidelines prescribed by AICTE, VTU Belagavi and Government of Karnataka. The process of admissions to all the programs offered by the institution is controlled by Government of Karnataka. Reservation benefits to SC/ST/ Other Backward Classes are as per the regulations of Govt. of Karnataka. Proper weightages in admission are given to students who have excelled in sports, NCC, NSS etc.

VTU, Belagavi, designs the curriculum and the same curriculum is followed in BIET by a systematic plan of action which includes semester plan, lesson plan, course file, assignments, internal assessment test schedule. Many of the senior faculty of the institute are members of the Boards of studies and contribute significantly to the design of curriculum. There is a regular interaction with the stake holders and their input on curriculum is conveyed

to university through the members of the boards of studies. Faculties also participate and conduct workshops related to curriculum development.

To bridge the gap between theoretical knowledge and industrial practices, industrial visits are arranged by the staff members of the individual department Also the experts from industry are invited and guest lectures are arranged on recent development in the respective fields. In addition, special lectures are conducted by inviting distinguished personalities from different organizations. To make students involve in the teaching learning process, new and innovative teaching techniques in addition to the traditional lecture method is evolved. The faculty members deploy learner centric techniques such as assignments, discussions, experiential learning, use of audio-visual aids, case study, projects, surveys, quiz etc., in the delivery of academic programmes.

Delivery of the curriculum is monitored by the Head of the department and Dean -Academic once in fifteen days and once in a month by the Principal. Feedback on teachers is taken at regular intervals to assess the performance of teachers on the delivery of the syllabus. Feedback is analyzed and the results of the analysis are communicated to the teachers.

Criterion II: Teaching – Learning and Evaluation

Institution has the strategy of planning academic activities before the commencement of the semester. The academic calendar is given by the affiliating University and the Dean Academic prepares an institution academic calendar in consultation with the heads of department. Faculties prepare lesson plan and implement in academics. Internal evaluation is carried out by the faculty, and semester examinations are conducted by the university. The evaluation results are analyzed and students' feedback is obtained and necessary changes are made, if required, in the teaching methodology. The institute promotes innovative teaching learning methods and extensive use of Information and Communications Technology (ICT). Faculties are encouraged to attend workshops, seminars, faculty development programs and induction program for skill up gradation and improving teaching methodology. The performance of the students in the tests and semester examinations is monitored by an Internal Academic Audit group to evaluate the academic progress of the departments in particular and institute in general.

Institution conducts skill training for students and encourages students to participate in industrial projects. Visits to industries, regular class seminars, discussions on case studies, special lectures by industrial experts, EDUSAT programs, and NPTEL courses add further value to the effective learning. Use of smart board, PPT presentations, videos, related software is encouraged to improve the learning capabilities of the students.

Students are mentored by the faculty on their academic and personal problems. This results in improved overall performance of the students. Every teacher is entrusted with the task of mentoring a batch of 15 students and is responsible for academic and personal mentoring. This is to strengthen the bonds of appreciation and affection between teachers and students.

The institute sponsors its faculty for qualification improvement such as PG / Ph.D. under QIP. In every academic session, student feedback is taken to evaluate the academic performance of the faculty. Various criteria have been considered in the confidential format to evaluate staff performance. Confidential reports of new faculty members are submitted by the heads of the department to the Principal. Based on the remarks sent by the Principal to the governing body, regularization and promotion of the faculty concerned will be initiated.

Criterion III: Research, Consultancy and Extension

Research has been a way of life at BIET. BIET has very clearly understood the fact that unless research and innovation activities are blended with academics, it has very less impact on the society and the nation. BIET has always been amidst meaningful research and has a highly conducive environment for carrying out research and innovation. The management has been proactive in extending facilities required for solving complex industrial research problems in addition to lending a helping hand to undertake research on problems related to local industries and community.

The institute has a Research Advisory Committee (RAC) to address and monitor the issues related to the research. Thirteen departments have been recognized as Research centers by VTU and these centers are actively engaged in meaningful research. Totally 91 research scholars are carrying out research in these centers. Forty three faculties of the institute have Ph.D. and are guiding research scholars in various engineering domains. A broad engineering spectrum can be covered in research as expertise is available in wide ranging disciplines. Evidence of research and innovation can be seen through some products developed by the institute which have been commercialized. Institute has to its credit more than 200 publications from the faculties and students in national and international journals of repute.

Institute has a **Product Development Center (PDC)** shouldering the responsibility of providing technological inputs to small and medium scale industries and providing complete solutions in terms of product design and development. Several products have already been developed and commercialized by the product development center of the institute. Silk hank dyeing machine, Fabrofeel, Vacuum pump, Steady rest for grinding applications, Thermal cutting of glass, Pedal operated silk reeling machine, Sow box for power loom, Silk knitted products, Bio fuels, Health care research, environmental impact assessment etc. are some of the products and processes developed by the institute. Many of the departments are engaged in active industrial consultancy. An **Industry Institute Partnership Cell (IIPC)** is also functioning in the institute.

Recently, Department of Mechanical engineering has developed an internal grinding machine, with 60000 r/min high frequency spindle and granite epoxy composite machine base, in association with Acumac Machine Tools Pvt. Ltd., Bengaluru. It has extended technical support to cast a granite epoxy composite bed weighing about 2.5 tonnes for a thread grinding machine being developed by UCAM Industries Pvt. Ltd., Bengaluru.

Institute has purchased required software for research and added the required infrastructure and equipment in the last five years. Many of the faculty members have received grants from national/state level funding agencies like AICTE, VGST, DST, KSCST, etc. Some of the departments are engaged in consultancy and are extending valuable technical support to industries and Government departments.

Faculties are encouraged to pursue research by providing them leave for higher studies. Faculties are motivated to carryout consultancy work with industries. Faculties are provided with Library and Laboratory facility for research work. Faculties are motivated to contribute their research articles in conferences and reputed journals. Many departments have signed MOUs with industries to conduct industry related projects, sending students for internship and skill development.

Industry Institute Interaction

Institute has signed MOUs with industries. Institute conducts regular meetings and gets suggestions for curriculum developments. These suggestions are forwarded to the university for incorporating in the syllabus, as and when revised. Industrial visits and training in the respective domains are arranged regularly. Industries are requested to provide internship, awards to meritorious students and financial assistance for research. To promote entrepreneurship, BIET has applied for incubation centre under Government of Karnataka 'New Age Incubation Network (NAIN)'.

Community Engagement

NCC, NSS and LEAD units of the College are actively involved in the Community Development Programmes. Institute conducts NSS activities related to health and hygiene, environment, literacy among the rural people, blood donation camp, effects of Tobacco usage on health etc. This enables students of our college to get an opportunity to get sensitized to the problems of the society at large and serve the society. Priority areas like environment, social forestry, health and sanitation, education and culture are given emphasis for community awareness. Students have actively participated in "Swacch Bharath Abhiyan" and leadership training programs conducted by LEAD CELL.

Criterion IV : Infrastructure and Learning resources

BIET believes in a broad based education and believes in providing state art infrastructure facilities to achieve excellence in academics and research. Policy of the Institution for creation and enhancement of Institute's infrastructure facilities is in line with the objectives laid down by the Governing body. Creation of infrastructure is as per AICTE norms; additional infrastructure facilities are created based on changes in the curriculum, introduction of new courses and research requirements.

Institute has an excellent physical infrastructure in the form of buildings with class rooms, laboratories, seminar halls, staff rooms, R&D centers, drinking water supply, reprographic facilities, rest rooms etc. All these facilities are constructed as per AICTE norms with lot of light, ventilation and extra space for free movement of the students. Further, provision is made in

each building for its vertical growth. The green gardens within the campus are an attraction for not only the students but also for the public. BIET campus is known as “Walkers’ Paradise” as many people come here for a morning walk every day.

Laboratory equipments, devices, computers and related software are procured in a systematic way and upgraded periodically based on the changing curriculum and intake. The institute has 25 Mbps Airtel Leased line Internet and 2 Mbps BSNL Broad Band Internet facilities.

The boys hostel has three blocks with a built up area of 12880 sq.m. spread on area of 4.5 acres. There are 200 rooms accommodating 608 students. The rooms are well furnished and the hostel has lush green surrounding. Stationery shop and internet facility are provided in the hostel. Surveillance cameras are installed in the hostel blocks for the safety and security of the students. “Amrutha”, ladies hostel within the campus accommodates 300 boarders with 100 rooms. This hostel has one block with four floors and has a built up area of 6500 sq.m. Solar hot water facility is also available. All hostel blocks are provided with water purifiers. Round the clock security is provided. Surveillance cameras are installed in the hostel blocks and at some strategic places in the campus for the safety and security of the students.

For uninterrupted power supply in the college campus (including hostels), two generators of 180kVA & 200kVA capacity have been installed in the college campus.

The institute has EDUSAT facility, VTU recognized e-learning lab through which first year students get study material and NPTEL videos on various subjects available for students and staff. ICT enabled teaching methods are extensively employed by the teachers in many departments.

The institute is a member of VTU consortium for library resources. The Library & Information Centre is housed in the Administrative Block & having three floors including two mezzanine floors, with an area of 3175 sq.m. The library has a seating capacity for 600 users at a time. It has adapted open access system and maintains Online Public Access catalogue (OPAC) to provide easy access to the stacks. The library subscribes to 184 print journals and a good number of e-journals through VTU-Consortium subscription. The Institute has membership of DELNET consortium where the faculty and students can access over 750 scientific journals and 850 Engineering journals. A library advisory committee of the institute monitors the library growth through a qualified librarian. In addition to the general library, the engineering departments have exclusive department libraries for quick and easy access of books by staff and students.

Institute provides high quality sports facilities. Grounds for games like Cricket, football, hockey, and courts for Basket ball and Tennis are available within the campus. Indoor games such as shuttle badminton, table tennis, chess, carom etc, for both boys and girls are available. State of art 12 station Multi Gym facility is also available in the campus. A number of tournaments/ athletic meets of university / zonal/district level are organized every year. Institute has the distinction of sending students to represent

university consistently every year. Every department has its own sports activity conducted annually for the entire college.

The Training and Placement cell of the institute has the entire infrastructure for conducting campus interviews with a modern seminar hall, group discussion room, office etc. A state of the art auditorium of capacity 300 is also being built for training and placement activities. Institution has cooperative society within the campus. Institution also has Bapuji Cooperative bank to provide banking facility for students and staff.

Some percentage of the total revenue is earmarked for maintenance of campus facility. The institution has separate maintenance section for maintaining buildings, electrical works, housekeeping, CCTV system, etc. Maintenance of UPS/generators, computers, networking maintenance, and telecom maintenance is managed by staff ear marked for maintenance activities. Periodic calibration of laboratory equipment is carried out by the instructors of laboratories concerned.

A fully air conditioned auditorium is being built with a seating capacity of 700 and equipped with stage, public address system, LCD projector, and internet and Wi-Fi facilities. Institute is planning to have ERP software to completely automate student information, administration, library and other activities of the institution.

Criterion V: Student support and Progression

BIET has understood the importance of broad based education and has created a conducive environment for the students to blossom into complete individuals. BIET believes in inculcating right attitude in the minds of young students and develop them as individuals who have the innate desire not just to succeed in their own lives but also to contribute meaningfully to societal development in all possible spheres. A very peaceful and harmonious environment prevails in the campus and a cordial relationship exists between the teacher and the taught. The campus is safe and secure for the students and is known for its discipline.

For every 15 students there will be one faculty counselor who regularly monitors students' performances in academics. Slow learners are identified by the counselors and separate coaching is arranged for them (Special classes/tutorials). Special care will be taken to build confidence in such students so that they will sail along with the main stream. Progress reports of students are sent to parents. Parents' meets are conducted at the departmental level to discuss the difficulties faced by the students. Ragging has been seriously viewed by institute authorities. At the institute level there is an Anti-Ragging committee with principal and director heading the same. Several preventive measures have been taken to prevent ragging in any form. The statutory warning against ragging has been displayed at various locations in the Institute. These specific student centric measures have not only improved the academic performance of the students but also reduced the dropout percentage.

This institute provides a lot of incentives and scholarships/medals to meritorious students in addition to the scholarships available for reservation categories. There are many awards given by the institute. Apart from this,

top students from all the departments of every semester are identified and awarded cash prizes. The Institution encourages all the departments to organize various Value Added Programs to students to make them learn contents beyond the prescribed curriculum. Accordingly, through respective departmental forums invited technical talks, workshops, hands on training sessions etc. will be arranged which will help the students to enhance their skills.

Separate coaching for GATE aspirants is being regularly arranged through **GATE-ETC.** The institute has MOU with **M/S Global Educational Consultancy Service, Bangalore** and this organization conducts special sessions to train students seeking admission to foreign universities. The institute has language laboratory and special training will be provided to the needy students to improve their English language. Special training programs to the students are regularly arranged for improving computer literacy. The institute provides internet facilities and has a modern digital library through which students can get updated information on science and technology.

Students are encouraged to participate in live consultancy projects/product/process development. Regular interaction with premier institutes like IITs, IISc and NITs is made possible by inviting faculty of those institutes for invited talks and sending students to visit such institutes for literature/data collection, analysis, seminars, etc. Students are sent to different industries / consultancy firms for internship every year. Regular industrial visits are arranged at the departmental level which will help the students to understand the industrial environment.

Every year institute brings out students' magazine "TECHNOWAVE". This contains articles on technical and general topics written by students. Poems, innovative photography, drawings/paintings by the students of the institute are included. Institute also publishes quarterly news-letter "BIETECH Voice" in which detailed information about all the activities of different departments is published.

For encouraging the students to participate in cultural events "Students Council" managed by the students has been established. Every year a mega cultural festival "Davana" is conducted for three days in which competitions from music, theatre, fine arts, dance and literary sections are held. In addition to this every department will conduct many sports and cultural competitions for their own students and of other departments also. Separate institute budget has been provided for conducting these activities.

To encourage multi-dimensional growth for students, BIET provides top infrastructure and modern sports facilities. The Institution provides reward/ financial incentive for the students representing in National/State/University level events. The Institution provides all necessary support and facilities to achieve excellence in their pursuits. The Institution ensures that sufficient funds are available to encourage sports.

To inculcate entrepreneurship qualities among the students, Entrepreneurship development cell (EDC) has been initiated. Through EDC many programs are regularly conducted to improve entrepreneur skills.

Placement cell guides the students to prepare for interviews by arranging personality development programs, skill development programs, communication skill development activities, group discussions, technical quiz and tests, etc.

Institute has Grievance Redressal Cell for students to file their grievances on college related issues. There is also Women Empowerment Cell and Anti Sexual Harassment cell to address problems of girl students. Fortunately, there are no cases of sexual harassment reported so far in the institute.

Many of alumni have helped our institute students to get placements through campus selections and off campus placements. Alumni have generously contributed and built "Silver Line Guest House" in the institute campus. This is a major contribution of alumni towards infrastructure development. Some of the alumni have instituted gold medals/prizes to the toppers of our institute. Many of alumni have helped in arranging industrial visits, internship training, project and research assignments to our students and helped in arranging by our students. Alumni have expressed frank opinion about the facilities and hinted some areas where things can be fine-tuned and improved.

Criterion VI: Governance and leadership

The institute has a Governing Body working under BEA. The Governing Body is the supreme authority in taking decisions related to the vision and mission, policies, road map, development and functioning of institute.

The action plan is formulated by the planning body which includes Principal, Director, Deans, and heads of the department and coordinators of various academic committees. The Principal of the institution is the member secretary of the Governing Body. This body provides suggestions, monitors the procurement, and decides on the introduction of new programs and welfare activities. The head of the institution is responsible for academic, nonacademic and administrative activities of the institution.

The college promotes a culture of participative management. The responsibility of managing the institution for its progress rests on the faculty, Heads of the department, Deans, Principal and Director. Various committee members work as a team for the betterment of the institute. At each level, there is an active participation in planning and implementation.

Head of the Department is involved in development, procurement, selection of new faculty, starting of new programs, and organizing invited/technical talks, seminars, workshops, Faculty development program etc.

Local Inquiry Committee (LIC) of VTU, Belgaum monitors the academic progress of the institution and conducts departmental inspection annually. The institution undertakes internal academic audit through Principal, Dean academic, and heads of department by reviewing the plans & progress of staff and students. The outcome of the audit is discussed with management to improve the academic quality and thus overall progress of the institution.

Regular meetings of the planning body are held in the institute. The Principal, Deans, Head of the departments conduct meetings with the

faculty, students, and experts from academia, industries and research centers.

The institution makes use of the performance of students in terms of pass percentage, placement percentage, and consultancy work to design and develop appropriate strategies. The details of these are communicated to the staff so that, they execute and accomplish the requirements. The faculty performance is reviewed through appraisals by the head of the department by considering various parameters of teaching learning process. Institution has a grievances redressal cell to resolve the grievances of students and faculty. Grievances / redressal committee provides suggestion boxes in all the departments. The committee conducts meetings to resolve grievances immediately if any. The anti-ragging committee functions in the college and there is display of the notices against ragging in the notice boards.

Criterion VII- Innovations and Best Practices

The present focus of the institute is to improve the laboratory infrastructure by bringing new industry relevant technology to enable higher level of learning in students, foster integrated learning by providing multiple industry relevant interfaces, enable students to take up industry relevant projects and encourage faculty to take up research in thrust areas.

There are forty three doctorate faculty members in the institute and many of the faculty members have registered and pursuing research. Faculty members attend various workshops which in turn help them in self-growth and proper delivery of curriculum to students.

Eminent personalities from various industries are invited to the institute for delivering lectures and interacting with students. Some of the final year projects are carried out with the technical assistance from the industries. The institute regularly interacts and takes feedbacks from the industries. Experts from industries and other organizations work as evaluators in the technical activities organized by the institute.

Institute has started many innovative programs which have helped to create a positive impact on the overall performance of the students. Need based professional skill development programs, soft skills development programs spanning over six semesters, student projects related to industries, product/ process development activities, technical consultancy, student counseling, remedial classes, encouraging outcome based teaching- learning procedures, use of ICT in teaching, interaction with the stake holders on a regular basis are some of the innovative and best practices of the institute.

The institute has environment friendly policies with regard to plantation, waste management, use of solar water heating system, use of renewable energy resources and water harvesting. A strict ban is imposed on the usage of cigarettes and tobacco products within the campus. Proper directions are given to the staff and students to park their vehicles in the indicated parking areas. Dead leaves and waste papers are not allowed to be put on fire in the campus. These are converted into vermicompost. Food waste collected from institute boys' and girls' hostels is used to generate cooking gas in the hostel kitchens, through a bio-methanation plant designed by Dept. of Mechanical

engineering. The institute gives top priority for planting the trees. The institute has a nursery to grow fruit and flower bearing plants.

The hallmark of BIET has been its strong interface with the industries and institutions of repute. Institute has full-fledged product development center which is undertaking development of products and transfer the technology to the entrepreneurs who are in need. Industry Institute Interaction Cell has been very active in the institute.

SWOC ANALYSIS OF THE INSTITUTE

SWOC analysis is an excellent tool to identify the inherent strengths and weaknesses of the Institute and the opportunities and challenges faced by the Institute from the external environment. A committee consisting of the Chairman, Principal, Director, Heads of various departments and some senior professors was formed to take up the SWOC analysis. In depth discussions were held at the departmental level and institute level. Based on the inputs obtained from the teaching and non-teaching staff, students, alumni, and industries, SWOC analysis results were summarized and approved by the management. The results are presented here:

Strengths:

- Dedicated, qualified and motivated faculty; knowledge base of faculty covers a wide spectrum of engineering domains like IT, product development and innovation, environment, Bio technology and infrastructure development.
- Institute is recognized by AICTE and has been **accredited thrice by NBA**; National River Conservation Directorate (NRCD), Ministry of Environment and Forest, Govt. of India recognized BIET as a **Reputed Scientific Institute.**
- Infosys recognized BIET as Advanced Partnership College & appreciated BIET as “A Model College for others across the country” under Campus Connect Programme**.** IBM has recognized Dept. of CS&E as a “Centre of Excellence”.
- Management is proactive and has willingness to recognize weaknesses of the institute and make improvements.
- Conducive atmosphere is prevailing in the institute for research.
- 13 departments have been recognized as **research centers by VTU**; most of these research centers are engaged in research related to industry/societal needs.
- Many departments are engaged in active industrial consultancy.
- Forty three faculties in the institute are having Ph.D. and around 90 research scholars are pursuing research in the thirteen research centers.
- Excellent team work among the faculty; there is greater interaction among various departments through inter disciplinary projects and programs.
- Strong industry interface; institute has many active MOUs with industries, organizations and institutes of repute. Industry Institute Partnership Cell has been very active in the institution.
- Institute has already developed many products which have been commercialized through technology transfer to some industries.

Product Development Center of the institute has been contributing substantially to the cause of product/process development.

- Many national and international funding agencies have identified the institute as one of the result oriented research centers; there has been substantial funding for research activities of the institute through Swiss Development Cooperation (SDC), AICTE, DST, KSCST, VGST, ITBT, KSCST, and some reputed industries.
- State of the art computing facility and Wi-Fi facility extended to faculty and students.
- An excellent teaching-learning atmosphere leading to close relationship between faculty and students.
- Institute has an excellent track record in the university examinations; secured an average of 10 university ranks every year in the last five years.
- Excellent Library facility; excellent e-resources in the form of on line journals; around 180 print journals covering a wide engineering domain; more than a lakh of books with twenty four thousand titles.
- Under graduate student involvement in active research through their industry related projects/ internship / training is one of the distinguished factors of this institute to promote learning beyond curriculum.
- BIET has won 6 times “Best College” award in the KSCST student project exhibitions.
- Excellent sports facilities. Student involvement in extracurricular activities and sports is excellent.
- Strong presence of NSS, NCC, ISTE students’ chapter and other professional bodies in the institute; these bodies provide an excellent platform for the students to participate in extension activities.
- Student Training programs and Value Added Training programs are conducted regularly to enhance the employability of the students.
- Institute has been consistent in placing the students in leading industries in IT and core sector. More than 60-70 % of the eligible students are placed annually.
- Alumni of this institute have done excellent performance in their professional career. An Alumni association is functioning in the institute. BIET alumni have occupied responsible positions in some of the best known enterprises in India and across the globe.

Weaknesses:

- Faculty publications in peer reviewed journals need to be improved.
- There is a need to educate the faculties on Intellectual Property Rights and Patents.
- Generation of funds from external funding agencies for research and development related activities needs to be improved.
- ICT facilities need to be upgraded; need to adopt ERP software for campus management, student and faculty governance and learning management systems.
- There is a need to employ qualified faculty in some departments.
- Alumni network needs to be improved.
- Professional training to students still requires a lot of refinement.
- Facilities extended to students for competitive examinations like GATE,GRE, GMAT, TOFEL, IAS, etc. need to be improved.

- Placement opportunities and improvement in curriculum need to be addressed through a greater interaction with alumni and industries.
- Need to attract core companies to enhance placement opportunities for students in core engineering domain.
- Lack of non-resident Indian and international students' admission to institute.
- The paradigm shift from output based education to outcome based education is still to be completely understood and adapted by the faculty.
- The concept of "green campus" needs to be addressed effectively.

Opportunities:

- Develop skilled engineering graduates with leadership qualities to shoulder the responsibility of building a vibrant India.
- There is greater interaction among the departments; this opens up many avenues for joint research programs.
- The institute has a strong industry interface; more collaboration with institutes and industries of repute can be materialized.
- Institute has qualified and dedicated teachers specialized in diversified fields of Engineering. There are many areas in which the institute has contributed to industry and society at large; there is a possibility of starting centers of excellence promoting high quality research in the following areas:
  i. Machine tools and vibration, Alternate fuel development, High speed machining and Composites.
  ii. Water quality testing & Air Quality Monitoring.
  iii. Environmental Impact Assessment Studies on Developmental Projects including industries, industrial area developments etc.
  iv. Building Materials Testing.
  v. Textiles processing and testing.
- Post graduate programs in Electronics and communications engineering, Electrical engineering, and Chemical engineering can be started.
- Alumni of our institute have occupied important positions in the industrial domains; some of them are successful entrepreneurs also; strengthening of the alumni network leads to better academic performance and placement opportunities.
- Participation of faculty in active research can be enhanced through incentives. 'Brand building' for BIET through effective academic performance and industry interaction leads to national and international recognition.
- Institution has excellent opportunity to build a brand through technological interventions in building Davangere as "Smart city".
- Effective collaboration with Government agencies for extending design, testing and certification facilities leading to better rapport and image with the society.
- As the institute is engaged in meaningful research, there are greater chances for research funding from national and international agencies.
- Since the management is proactive, financial budgeting for development in the envisaged areas can be more focused. Additional funds for research and development can be raised through alumni interaction.

Challenges:

- Gradual reduction in the intake of students due to increase in the number of engineering institutes across the state and country.
- Frequent changes in government policies on admission and fee structure.
- Recruiting meritorious faculty and retaining them.
- Quality of students entering the institute needs to be improved.
- Geographical location is far away from urban centers like Bengaluru, Belagavi, Chennai, Hyderabad, and Mumbai.
- Involve more faculty members in research through incentives.
- To obtain international recognition for the programs run by the institute.
- Creation of more placement opportunities in core industries.

FUTURE PLANS:

On completion of SWOC analysis, a strategic plan to develop the institute as a centre of excellence in engineering education is envisaged. Principal, Director, Heads of department, senior faculty were involved in drafting the road map of the institute for the next five years. This plan consists of short term and long term goals to make the vision of the institute a reality. The contents of the plan are depicted below:

- Improve **ICT facilities** to enhance the effectiveness of teaching-learning.
- On priority, addition of **ERP software** for campus management, student and faculty governance, and learning management systems.
- **Upgrade the laboratory facilities** on a continual basis to cater to the needs of state of the art technologies.
- Obtain **recognition** from accrediting agencies like **NBA, NAAC, NIRF, ISO, NABET, NABL, professional bodies, and industries of repute.**
- **Strengthen further the industry interface** through collaboration with leading **industries and institutions of international repute** to carryout joint research projects.
- Conduction of **community oriented programs** and sensitizing students and faculties to be a part of such programs.
- Introducing **new post graduate courses** of industry relevance.
- **Enhance product development activities** to develop products/processes related to societal use.
- Create suitable **mechanism to conduct stake holders meet** on a periodical basis to obtain their valuable feedback on curriculum, infrastructure, training, internship, and placement opportunities.
- Develop a **structured module for holistic development** of students-through personality development, soft skills, and technical skills development programs.
- Build Post Graduate block, swimming pool, water harvesting system, solar power generation for captive use and additional hostel blocks for boys and girls.

- Creation of **centers of excellence** in Civil, Mechanical, Computer science, Information science, Bio-technology, Textiles and Chemical engineering departments.
- **'Finishing school'** to be introduced for the benefit of students to acquire professional and life skills.
- **Incubation center** to be started to promote entrepreneurship.

Section B

PROFILE OF THE AFFILIATED COLLEGE

SECTION B:
PROFILE OF THE AFFILIATED COLLEGE

1. Name and Address of the College:

Name :	BAPUJI INSTITUTE OF ENGINEERING AND TECHNOLOGY	
Address :	P.B. NO.325, SHAMANUR ROAD	
City : DAVANAGERE	Pin : 577004	State : KARNATAKA
Website :	www.bietdvg.edu	

2. For Communication:

Designation	Name	Telephone with STD code	Mobile	FAX	Email
Principal	Dr. S. Subrahmanya Swamy	O:08192-222245 R:08192-260942	9880410170	08192-223261	principal@bietdvg.edu
Steering Committee Co-ordinator	Dr. K. Sadashivappa	O: 08192-222245	9241425736	08192-223261	kankuppi1@yahoo.in

3. Status of the Institution:

Affiliated College	✓
Constituent College	
Any other (specify)	

4. Type of Institution:

a. By Gender

For Men	
For Women	
Co-education	✓

b. By Shift

Regular	✓
Day	
Evening	

5. Is it a recognized minority institution?

Yes	
No	✓

If yes specify the minority status (Religious/linguistic/ any other) and provide documentary evidence

6. Sources of funding:

Government	
Grant-in-aid	
Self-financing	✓
Any other	

7. a. Date of establishment of the college: **14-09-1979**

b. University to which the college is affiliated /or which governs the college (If it is a constituent college)

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

c. Details of UGC recognition:

Under Section	Date, Month & Year (DD-MM-YYYY)	Remarks (If any)
i. 2 (f)	04-04-2013	F No: 8-134/2013 (CPP-I/C)
ii. 12 (B)		

(The Certificate of recognition u/s 2 (f) enclosed)

d. Details of recognition/approval by statutory/regulatory bodies other than UGC (AICTE, NCTE, MCI, DCI, PCI, RCI etc.)

Under Section/ clause	Recognition/Approval details Institution/Department Programme	Day, Month and Year (DD-MM-YYYY)	Validity	Remarks
AICTE	B.E/M.Tech/MCA/MBA	05-04-2016	2016-2017	File No: South-West/ 1-2812285324/2016/EOA

AICTE recognition/approval letter enclosed-Annexure III

8. Does the affiliating university Act provide for conferment of autonomy (as recognized by the UGC), on its affiliated colleges?

Yes [✓] No [ ]

If yes, has the College applied for availing the autonomous status?

Yes [ ] No [✓]

9. Is the college recognized

a. by UGC as a College with Potential for Excellence (CPE)?

Yes [ ] No [✓]

b. for its performance by any other governmental agency?

Yes [✓] No [ ]

If yes, Name of the agency NRDC, CPCB, and NBA

Date of recognition by NBA: 3 times accredited

2001	2004	2008
Civil Engg. Mechanical Engg. Electrical & Electronics Engg. Electronics & Communication Engg. I & P Engg. Textile Technology	Textile technology Chemical Engg. Computer Science Engg. Instrumentation Tech. Electronics & Communication Engg. Electrical & Electronics Engg. I & P Engg. Mechanical Engg. Civil Engg.	Civil Engg. Mechanical Engg. I & P Engg. Electrical & Electronics Engg. Electronics & Communication Engg. Textile technology Computer Science Engg. Chemical Engg. Information Science & Engg. Biotechnology Engg. Biomedical Engg. M.Tech-Machine Design

10. Location of the campus and area in sq.mts:

Location	**URBAN**
Campus area (m^2)	375550.00
Built up area (m^2)	96200.00

11. Facilities available on the campus (Tick the available facility and provide numbers or other details at appropriate places) or in case the institute has an agreement with other agencies in using any of the listed facilities provide information on the facilities covered under the agreement.

- Auditorium/seminar complex with infrastructural facilities

  Yes ✓ No

- Sports facilities

Play ground	Yes:	✓	No:	
Swimming pool	Yes:		No:	✓
Gymnasium	Yes:	✓	No:	

- Hostel

  * Boys' hostel
    i. Number of hostels: 3
    ii. Number of inmates: 610
    iii. Facilities (mention available facilities)
    Medical Facilities, Power Backup, General Store, Mess etc.

  * Girls' hostel
    i. Number of hostels: 2
    ii. Number of inmates: 460
    iii. Facilities (mention available facilities)
    Medical Facilities, Power Backup, General Store, Mess etc

* Working women's hostel
  i. Number of inmates Yes: ☐ No: ✓
  ii. Facilities (mention available facilities)

- Residential facilities for Teaching and Non-teaching staff (give numbers available — cadre wise)

Yes: ✓ No: ☐

Number:	10

- Cafeteria — Mess Yes: ✓ No: ☐

- Health centre – Yes: ✓ No: ☐

Health centre staff –

Qualified Doctor : Full time ☐ Part-time ✓

Qualified Nurse : Full time ☐ Part-time ☐

1.	Facilities like banking, post office, book shops	Yes	✓	No	
2	Transport facilities to cater to the needs of students and staff	Yes	✓	No	
3.	Animal house	Yes		No	✓
4	Biological waste disposal	Yes	✓	No	
5	Generator or other facility for management/regulation of electricity and voltage	Yes	✓	No	
6	Solid waste management facility	Yes	✓	No	
7	Waste water management	Yes		No	✓
8	Water harvesting	Yes	✓	No	

Generator or other facility for management/regulation of electricity and voltage
The campus has electricity supply from 11kV feeder from Bangalore Electric Supply Company (BESCOM). Institute has back up power supply 200 kVA & 180 kVA Diesel Generator sets.

12. Details of programmes offered by the college (Give data for current academic year)

Sl. No.	Programme Level	Name of the Programme/ Course	Duration	Entry Qualification	Medium of instruction	Sanctioned/ approved Student strength	No. of students admitted
1	Under-Graduate	B.E	4 Years	II PUC	English	Total 820	Total 692
2		Bio-Technology	-"-	-"-	-"-	60	24
3		Chemical Engineering	-"-	-"-	-"-	30	25
4		Civil Engineering	-"-	-"-	-"-	120	119
5		Computer Science & Engineering	-"-	-"-	-"-	120	111
6		Electrical & Electronics Engineering	-"-	-"-	-"-	60	52
7		Electronics & Communication Engineering	-"-	-"-	-"-	120	107
8		Electronics & Instrumentation Engineering	-"-	-"-	-"-	30	16
9		Information Science& Engineering	-"-	-"-	-"-	120	108
10		Mechanical Engineering	-"-	-"-	-"-	120	90
11		Textile Technology	-"-	-"-	-"-	40	40
12	Post-Graduate	M.Tech	2Years	B.E/ equivalent	English	Total 120	Total 62
13		M.Tech in Computer Science	-"-	-"-	-"-	24	09
14		M.Tech in Machine Design	-"-	-"-	-"-	18	10
15		M.Tech in Textiles	-"-	-"-	-"-	18	02
16		M.Tech in Thermal Power Engineering	-"-	-"-	-"-	18	03
17		M.Tech in Environmental Engineering	-"-	-"-	-"-	18	15
18		M.Tech in Structural Engineering	-"-	-"-	-"-	24	23
19	Post-Graduate	MBA	2 Years	UG	English	180	117
20		MCA	3Years	UG	English	60	20

Sl. No.	Programme Level	Name of the Programme/ Course	Duration	Entry Qualification	Medium of instruction	Sanctioned/ approved Student strength	No. of students admitted
21	Ph.D.	13 Research centers recognized by VTU. Bio-Technology, Chemical Engineering, Civil Engineering, Mechanical Engineering, Electrical & Electronics, Computer Science & Engineering, Textile Technology, Chemistry, Mathematics, Bio-medical, Industrial & Production Engineering, Environmental, MBA.	3 Years and above	PG / equivalent	English	5 per guide	97

13.Does the college offer self-financed Programmes?

Yes [✓] No [ ]

If yes, how many? BE, M.Tech., MBA & MCA (04)

14.New programmes introduced in the college during the last five years if any?

Yes	✓	No		Number	01

15.List the departments:

Faculty	Departments (ex. Physics, Botany, History etc.)	UG	PG	Research
Science	N/A			
Arts	N/A			
Commerce	N/A			
Engineering	Bio-Technology Engineering, Chemical Engineering, Civil Engineering, Mechanical Engineering, Electrical & Electronics, Electronics & Communication, Electronics & Instrumentation, Computer Science & Engineering, Information Science& Engineering, Textile Technology.	B.E	---	---

Faculty	Departments (ex. Physics, Botany, History etc.)	UG	PG	Research
Engineering	Civil Engineering, Mechanical Engineering, Computer Science & Engineering, Textile Technology.		M.Tech	
Engineering & Basic Science	Bio-Technology, Chemical Engineering, Civil Engineering, Mechanical Engineering, Electrical & Electronics, Computer Science & Engineering, Textile Technology, Chemistry, Mathematics, Bio-medical, Industrial & Production Engineering, Environmental, MBA.			Ph.D.
Management	Master of Business Administration		MBA	Ph.D.
Computer Applications	Master of Computer Applications		MCA	

16.Number of Programmes offered under (Programme means a degree course like BA, BSc, MA, .Com...)

Annual system [ ]

Semester system [04]

Trimester system [ ]

17. Number of Programmes with

Choice Based Credit System [04]

Inter/Multidisciplinary Approach [ ]

Any other (specify and provide details) [ ]

18.Does the college offer UG and/or PG programmes in Teacher Education?

Yes [ ] No [✓]

19.Does the college offer UG or PG programme in Physical Education?

Yes [ ] No [✓]

20.Number of teaching and non-teaching positions in the Institution

Positions	Teaching faculty						Non-teaching staff		Technical staff	
	Professor		Associate Professor		Assistant Professor					
	*M	*F	*M	*F	*M	*F	*M	*F	*M	*F
Sanctioned by the UGC / University / State Government Recruited	--	--	--	--	--	--	--	--	--	--
Yet to recruit	--	--	--	--	--	--	--	--	--	--
Sanctioned by the Management/ society or other authorized bodies Recruited	**17**	**05**	**24**	**03**	**114**	**86**	**95**	**08**	**39**	**01**
Yet to recruit	08		33							

***M-Male *F-Female**

21.Qualifications of the teaching staff:

Highest Qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent Teachers							
D.Sc./D.Litt.	--	--	--	--	--	--	--
Ph.D.	15	04	13	01	06	01	40
M.Phil.	--	--	--	--	--	--	--
PG	--	01	11	02	51	29	94
Temporary Teachers							
Ph.D.	02	--	--	--	01	--	03
M.Phil.	--	--	--	--	--	--	--
PG	--	--	--	--	53	55	108
Part Time Teachers							
Ph.D.	--	--	--	--	--	--	--
M.Phil.	--	--	--	--	--	--	--
PG	--	--	--	--	03	01	04

22.Number of Visiting Faculty /Guest Faculty engaged with the College.

Male: 04, Female: 01, Total=05

23.Furnish the number of the students admitted to the college during the last four academic years.

Under Graduate:

Categories	2016-2017		2015-2016		2014-2015		2013-2014	
	Male	Female	Male	Female	Male	Female	Male	Female
SC	23	24	20	23	25	29	25	21
ST	07	08	08	08	05	08	04	10
OBC	42	47	50	36	83	57	77	48
General	288	237	296	248	269	203	283	205
Others	13	03	00	00	00	00	82	16

Post Graduate:

Categories	2016-2017		2015-2016		2014-2015		2013-2014	
	Male	Female	Male	Female	Male	Female	Male	Female
SC	10	07	10	08	09	11	04	05
ST	05	07	04	07	07	04	02	02
OBC	59	34	61	26	45	31	46	27
General	41	46	68	49	66	60	83	66
Others	00	00	00	02	02	03	00	00

24. Details on students enrollment in the college during the current academic year:

2016-2017

Type of students	UG	PG	M. Phil.	Ph.D.	Total
Students from the same state where the college is located	649	209	---	97	999
Students from other states of India	43	01	---	---	--
NRI students	---	---	---	---	---
Foreign students	--	--	---	----	--
Total	692	210	---	97	999

25.Dropout rate in UG and PG (average of the last two batches)

UG	2.55%	PG	00

26.Unit Cost of Education

(Unit cost = total annual recurring expenditure (actual) divided by total number of students enrolled)

a. **Including the salary component** **49,213=00**

b. **Excluding the salary component** **12,479=00**

27.Does the college offer any programme/s in distance education mode (DEP)?

Yes ✓ No

If yes,

a) Is it a registered centre for offering distance education programmes of another University

Yes ✓ No

b) Name of the University which has granted such registration.

Indira Gandhi National Open University (IGNOU)

c) Number of programmes offered

PG: MARD, MTTM, MEG, MEC, MAH, MPS, MPA, MSO, MCOM (9)
UG: BTS, BA, BCOM, BPP (4)
PG Diploma & Diploma : PGDDM, PGDRD, PGDIBO, PGDIS, DECE, DNHE, DTS, DCE, DAFE (9)
Certificate course : ACISE, CDM, CES, CNM, CBS, CTE, CFE, CAFÉ, CTS, CFN, CNCC, CRD, CHR, CCP, CIT, CIG (16)

d) Programmes carry the recognition of the Distance Education Council.

Yes ✓ No

28. Provide Teacher-student ratio for each of the programme/course offered

BE	Ratio
Bio-Technology	1:16
Chemical Engineering	1:15
Civil Engineering	1:15
Computer Science & Engineering	1:15
Electrical & Electronics Engineering	1:15
Electronics & Communication Engineering	1:15
Electronics & Instrumentation Engineering	1:15
Information Science& Engineering	1:16
Mechanical Engineering	1:15
Textile Technology	1:15
M.Tech	
M.Tech in Computer Science	1:12
M.Tech in Machine Design	1:12
M.Tech in Textiles	1:12
M.Tech in Thermal Power Engineering	1:12
M.Tech in Environmental Engineering	1:12
M.Tech in Structural Engineering	1:12
MBA	1:13
MCA	1:15

29. Is the college applying for

Accreditation :	Cycle 1	✓	Cycle 2		Cycle 3		Cycle 4	

Re-Assessment: [ ]

(Cycle 1refers to first accreditation and Cycle 2, Cycle 3 and Cycle 4 refers to re- accreditation)

30. Date of accreditation* (applicable for Cycle 2, Cycle 3, Cycle 4 and re assessment only): NA

Cycle 1: ..... (DD/MM/YYYY) Accreditation Outcome/Result.....

Cycle 2: ..... (DD/MM/YYYY) Accreditation Outcome/Result.....

Cycle 3: ..... (DD/MM/YYYY) Accreditation Outcome/Result.....

* Kindly enclose copy of accreditation certificate(s) and peer team report(s) as an annexure.

31. Number of working days during the last academic year.

291 days

32. Number of teaching days during the last academic year

(Teaching days means days on which lectures were engaged excluding the examination days)

184 days

33. Date of establishment of Internal Quality Assurance Cell (IQAC)

IQAC: 16-08-2016

34. Details regarding submission of Annual Quality Assurance Reports (AQAR) to NAAC.

(i) AQAR ..... (DD/MM/YYYY)

(ii) AQAR ..... (DD/MM/YYYY)

(iii) AQAR ..... (DD/MM/YYYY)

(iv) AQAR ..... (DD/MM/YYYY)

35. Any other relevant data (not covered above) the college would like to include:

National River Conservation Directorate (NRCD), Ministry of Environment and Forest, Govt. of India has recognized our institute as Reputed Scientific Institute.

Infosys recognized BIET as Advanced Partnership College & appreciated BIET as “A Model College for others across the country” under Campus Connect Programme.

I B M – Recognized Dept of CS&E as “Centre of Excellence” & given appreciation as “Learning Excellence & Technical Application of IBM Software” for 2009-10.

SRO & VTU have jointly identified BIET & have provided State-of-the-art V-SAT Channel under country's prestigious EDUSAT programme to this institute.

Our institute has 13 research centers recognized by VTU.

Three times our institute is accredited by NBA New Delhi (1999-2000, 2003-2004, 2007-2008).

Our Institute has bagged 68 university ranks during last 5 years (2011-2016).

Total research grants received during last five years Rs.3,39,94,777 (2011-2016).

Around 1300 students are placed in reputed companies during last five years (2011-2016).

Best College of the year award for SIX times in the KSCST Seminar-cum-Project Exhibition. This Institution has won this award 6 times out of 35 KSCST Exhibitions held so far.

Institute has many MoUs with industries and has a strong interface with industries.

Many products have been developed and commercialized through Product Development Cell of the institute. Some of the products developed are: Hank Dyeing machine, Cheese Dyeing Machine, Computerized Fabro Feel, High speed internal grinding spindle, Epoxy Granite Machine Tool Bed for grinding machine, precision steady rest, Vacuum Pump, Glass cutting apparatus by hot air jet.

Section C

Part –II

Criterion Wise Evaluation Reports

CRITERION -I
CURRICULAR ASPECTS

CRITERION I
CURRICULAR ASPECTS

1.1 Curriculum Planning and Implementation

1.1.1 State the vision, mission and objectives of the institution, and describe how these are communicated to the students, teachers, staff and other stakeholders.

Philanthropists of Davangere established an educational association "Bapuji Educational Association" in the year 1958 to facilitate students of this area to pursue quality education. The association has grown many folds and at present it is managing fifty educational institutions successfully.

Bapuji Institute of Engineering and Technology was established in the year 1979. The institute is recognized by AICTE, New Delhi, and University Grants Commission, New Delhi, under 2f. The institute is affiliated to Visvesvaraya Technological University Belagavi and Institute of Engineers, Kolkata. The institute has 10 UG programmes, 08 PG programmes and 13 VTU recognized research centers. The institute received accreditation for 6 UG programmes for the year 2001-2004, for 9 UG programmes for the period 2004-2007 and for 10 UG and one PG programme for the period 2008-2011.

VISION: "Our vision is to be in the forefront of technical education at the under graduate, post graduate and doctoral levels besides serving society by undertaking various industrial and society related activities".

MISSION: "Our mission as an institute is to provide the best possible technical education to students besides inculcating in them the values of various virtues which will enable them to become lovable citizens of the country".

QUALITY POLICIES:

Inculcating the concepts of discipline, punctuality, and ethics into thinking process of students to promote their overall growth.

Motivating teachers to impart knowledge by continuous interaction with students within the framework of rules and regulation of the university.

Carrying out objective evaluation of the performance of students'.

Enhancing the academic skills of the faculty through faculty development programmes.

Creating an atmosphere conducive to research in the campus.

OBJECTIVES

To become one of the most progressive and innovative knowledge centers.

To foster effective interaction between Industry and Institute and to impart world class education in Engineering, Management and Research.

To promote Industrial consultancy, entrepreneurship, conduct courses and training programmes in collaboration with Industry.

To develop commercially feasible technologies having societal relevance.

To enter into international exchange programmes with prominent educational institutes and Universities.

To nurture students as citizens with moral, ethical and social values so

as to discharge their obligations towards the industry and society.

COMMUNICATION

The Vision, Mission and Objectives are communicated to students, staff and parents by following methods:

The college prospectus records the Vision, Mission and Objectives in the first few pages. Prospective students and their parents will have the knowledge related to Vision and Mission.

The Vision, Mission and Objectives statements will reach the global public through college website ***www.bietdvg.edu***

Quarterly news letter and college magazine publish the Vision and Mission statements.

All departments have boards displaying Vision, Mission statements.

The first year students are introduced to these in the orientation program. A PPT presentation is made on the orientation day covering the academic, co-curricular and extracurricular activities. Presentation also includes disciplinary aspects and hostel rules and regulations.

1.1.2 How does the institution develop and deploy action plans for effective implementation of the curriculum? Give details of the process and substantiate through specific example(s).

Our Institute is affiliated to Visvesvaraya Technological University (VTU), Belagavi. The university prepares a course structure and syllabi for both UG and PG engineering programs. The course and curriculum details also include the number of contact hours both for theory and laboratory classes. It also includes the number of credits for theory paper and laboratory classes.

Institution follows the academic calendar provided by the university.

As per the syllabus provided by the university, Dean Academic, in consultation with Principal and heads of departments, develops a detailed action plan for effective implementation of curriculum. The calendar of activities and academic calendar are prepared and distributed to all departments.

Departmental head and other staff members develop the strategies for effective implementation of the curriculum.

In this connection, following steps are taken at the department level:

Display of Vision and Mission statement, Quality Policy and Quality Objectives of the institute.

Display of Vision and Mission statement of the Department.

All faculty members maintain Academic Diary and Course File for every course in the curriculum.

The academic diary and course file contains:

Programme Educational Objectives (PEO)
Programme Outcomes (PO),
Course Outcomes (CO)
University Syllabus
List of Text and Reference Books
University Question Papers
Time Table

Course Plan
Term Work Plan
Students Roll Call with Phone Numbers
Internal assessment question papers with model answers, result analysis
Report of Industrial Visits/Site Visits/Guest Lectures
Lecture Notes and e-learning resource materials
GATE Question papers

Academic Audit: The institute has Academic Cell headed by Dean Academic, with departmental heads as members. The academic diaries and the course files are checked twice a semester through academic audit to review the syllabus coverage, performance in the internal assessment to ensure smooth conduct of academic activities.

Internal Assessment Tests: As per the schedule, three internal assessment tests are conducted in each semester for each subject. The result analysis of the internal assessment is made and remedial classes are conducted for the weaker students.

Invited Lectures: Staff members arrange industrial visits to bridge the gap between theoretical knowledge and industrial practices. Also the experts from industry are invited and guest lectures are arranged on recent developments in the respective fields. In addition special lectures are conducted by inviting distinguished personalities from different organizations. To make students involve in the teaching learning process, new and innovative teaching techniques in addition to the traditional lecture methods are evolved. The faculty members deploy learner centric techniques such as web related assignments, discussion method, experiential learning, use of audio-visual aids, case study, projects, surveys, quiz etc., in the delivery of academic programmes.

Monitoring of Students: Each member of the department is associated with mentorship programme. Every teacher is entrusted with the task of counseling a batch of 15 students. They are responsible for academic and personal counseling. This is to strengthen the bonds of appreciation and affection between teachers and students.

1.1.3 What type of support (procedural and practical) do the teachers receive (from the University and/or institution) for effectively translating the curriculum and improving teaching practices?

College is affiliated to Visvesvaraya Technological University. VTU arranges faculty development programs regularly to update the knowledge of staff members of its constituent colleges for the academic need. Faculty of our college are encouraged and supported to participate in these programs. The institution takes care that faculty is exposed to latest advancements in various disciplines by offering support to different activities like:

Searching the thrust area and arrange to conduct faculty development programs.
Arranging national seminars, workshops on recent trends in different fields of engineering and technology.
Inviting expert academicians for delivering technical lectures.

Academic calendar is prepared well in advance of the beginning of the academic year providing sufficient time for curricular, co-curricular, and extracurricular activities in addition to the activities mentioned above.
Well equipped laboratories with state of art equipment.
State of the art library with computers, internet connectivity, E-books and journals. Library is kept open beyond the working hours.

Automated Services:

Online Circulation.
OPAC (Online Public Access Catalog to search the availability of required books in the library).

E resource subscribed through VTU consortium

i. IEEE/IEL online
ii. Elsevier science directory
iii. ASCE journals
iv. Springer
v. Taylor & Francis
vi. Proqust
vii. Knimbus

Total number of books in the library

i. Volumes : 112164
ii. Titles : 24765
iii. Book Bank : 27202

Book bank (Backward community 5 books are issued to SC/ST students)

i. Volumes : 5925
ii. Titles : 1125

Journals, Back Volumes & other facilities

i. Foreign Journals : 1811+ (Online)
ii. Indian Journals : 184 (Print)
iii. Back Volumes : 3775
iv. Handbooks : 140
v. General Magazines & News Papers : 23
vi. Encyclopedia : 15 Sets
vii. Ph.D. Thesis : 60
viii. Project Reports : 4745
ix. Proceedings & Conference Reports: 121
x. Reprography facility (Xerox)

Internet connectivity all over the campus

i. Airtel : 25 Mbps Leased Line
ii. BSNL : 2 Mbps Broadband
iii. Internet access to students is free
iv. 15 Nos. internet connections at the Library.
v. Internet facility for 1st year students is provided in Biotechnology Dept.
vi. Microsoft Campus Agreement
vii. Departmental computing & Internet facilities

Installing audio video aids like LCD projectors in seminar halls to augment the competency of teachers in delivering the course content.

Regular satellite interaction with academicians through EDUSAT.
Power back up through generators.
Major Licensed Software; details shown in **Annexure F-3.**
RO-drinking water facilities.
Wi-Fi connections.
E-learning facilities such as NPTEL Video Lectures.
Desk tops/ laptops for staff to prepare lesson plan, lecture notes question papers etc.,
Environmental friendly campus.

1.1.4 Specify the initiatives taken up or contribution made by the institution for effective curriculum delivery and transaction on the curriculum provided by the affiliating University or other statutory agency.

Even though the curriculum is prescribed by the affiliating VTU, college has taken initiative to make the delivery more than ordinary syllabus coverage.

Principal along with Dean Academic and heads will prepare the academic calendar.
This calendar is distributed to all departments.
Departmental heads will make the subject allotment to the faculty at the end of current semester for the forthcoming semester. There will be a time gap of around 45 to 50 days.
In this duration staff members will prepare the lesson plan, lecture notes with PPT presentations, models etc., required for the effective delivery of curriculum.
Modern teaching aids such as LCD projector with computer connectivity, audio-system and microphone provided in some of the class rooms and some seminar halls and are supplemented with NPTEL and other video lectures.
The attendance registers are inspected thoroughly by the head of the department once in a fortnight to check teaching schedules and number of lectures delivered and the same is transferred to a consolidated departmental file and handed over to principal.
Regular meetings are conducted by the head with the faculty members to ensure coverage of topics as per syllabus.
Faculties are encouraged to pursue Ph.D. programs and/or encouraged to take up the research work individually or in collaboration for improving their professional skills. Institution also conducts personality development programs for faculty and students.
Faculty members of various departments are encouraged to participate in National / International Conferences, Seminars, Training Programs, and also to organize National / International Conferences. Furthermore, faculty members are encouraged to publish their research findings in National and International journals.
Study leave is extended to faculty members who wish to pursue Ph.D. programs.
Result analysis is carried out after the announcement of results from university. Steps are taken to find out the reasons for poor results, if any, to make corrections in the teaching methodologies of the staff concerned.

1.1.5 How does the institution network and interact with beneficiaries such as industry, research bodies and the university in effective operationalization of the curriculum?

Industry: Eminent personalities from various industries are invited to the institute for delivering lectures and interacting with students. Some of the final year projects are carried out with the technical assistance from the industries. The institute regularly interacts and takes feedbacks from the industries. Experts from industries and other organizations work as evaluators in the technical activities organized by the institute. The institute has ISTE and CSI Chapters.

Institute: Institute motivates faculty members to take up research projects. There are 43 (forty three) doctorate faculty members in the institute and many of the faculty members have registered and pursuing research. Faculty members attend various workshops which in turn help them in self-growth and proper delivery of the curriculum to students.

Also the institution has entered into collaborations and Memorandum of Understanding (MOU) with various organizations shown below:

Cargill India Pvt.Ltd., Belludi, Harihar (Taluk), Davangere
M/s Indian Cane Power Ltd., Unit: Samsons distilleries, Duggavathi Village, Davangere
Shamanur Sugars Ltd. Duggavathi Village, Davangere
Synthite Industries Pvt. Ltd
Skanda Life Sciences Private Limited, Bangalore
Laxmi Genchem Sciences Pvt Ltd., Hyderabad
Central Dogma Pvt.Ltd., Pune
Biozeen- Bangalore Biotech labs Pvt.Ltd., Bangalore
Davangere Sugars Co.Ltd., Kukkuwada, Davangere
College of Dental Sciences, Davangere
Applied Cognition Systems Pvt. Ltd., (APCOG Systems), Bangalore.
Infosys Campus Connect
IBM Academic Initiative
EMC^2 Academic Alliance
VMware IT Academy program
Sri Mukesh Patel School of Technology, Management and Engineering.
M/S ASKAR MICRONS, Mysore
DHIO Research and Engineering, Pvt. Ltd. Bangalore
Trident Tech Labs Pvt. Limited
M/s EdGate Technologies Pvt. Limited
M/S UCAM Industries, Bengaluru
M/S Acumac Machine Tools, Bengaluru

This helps to invite experts for technical discussions and talks and also for upgradation of knowledge.

Alumni: Feedback is taken from the Institute Alumni Association, Parents and other stake holders to obtain their views about the curriculum and facilities available to the students and their suggestions are analyzed and many of these suggestions are implemented.

University: The faculty members of the college keep interacting with their counter parts at the affiliating university regularly and get latest information regarding subjects taught by them. Because of the wide internet facility in the institute faculty members visit the university portal regularly to know the latest changes in the syllabus. Head of the department and senior faculties of the department interact with the junior staff members and if needed, arrange for the expert lectures in the department in the relevant domains.

Invited talks from technical experts (scholars) for the last three years are available in **Annexure F-1**.

1.1.6 What are the contributions of the institution and/or its staff members to the development of the curriculum by the University? (Number of staff members/departments represented on the Board of Studies, student feedback, teacher feedback, stake holder feedback provided, specific suggestions etc.

The university revises the syllabus once in every four years.
Syllabus revision meetings are hosted for different programmes by the university.
Senior faculty members have become board of study members of the university in some disciplines.
In other departments senior faculty members have their colleagues from other institutions as members.
Faculty members are encouraged to attend the syllabus revision meetings at university level.
Specific suggestions received from different stakeholders are analyzed and conveyed to the university to consider the same in the Board of Studies meetings.
At the later stage university releases the syllabus in its web portal for any modifications.
Faculty members of the institute, after detailed review of the syllabus, give suggestions to the university for modifications required.

Following is the list showing faculty members involved in Board of studies of VTU:

Sl. No	Name of the faculty	Department	Position in BOS	Year
1	Dr. K.S.Basavarajappa	Mathematics	Member	2010-2013 2013-2016 2016-2019
2	Dr. M.S.Nagaraj	Electrical and Electronics	Member	2010-2013
3	Dr. B.E.Ranga Swamy	Bio technology	Member	2013-2016
4	Dr. Ravishankar	Bio technology	Member	2016-2019
5	Dr. K.Murgesha Babu	Textiles	Member	2013-2016
6	Dr. B.M.Kulkarni	Chemical Engineering	Chairman	2013-2016
7	Dr. G.P.Desai	Chemical Engineering	Chairman	2016-2019
8	Dr. Chethana Prakash	MCA	Member	2016-2019
9	Dr. S. Subrahmanya Swamy	Mechanical	Member	2016-2019
10	Dr.C.M.Kalleshappa	Chemical Engineering	Member	2016-2019

1.1.7 Does the institution develop curriculum for any of the courses offered (other than those under the purview of the affiliating university) by it? If 'yes', give details on the process ('Needs Assessment', design, development and planning) and the courses for which the curriculum has been developed.

The institution is affiliated to VTU, Belagavi. Institute has to adhere to the curriculum and syllabus prescribed by the university. However apart from the subjects offered by the university following programmes are arranged in the institute:

Projects,
Industrial visits,
Guest lectures,
Workshops,
Faculty development programs, participation in seminars, symposium, National and International conferences by faculty and students.
Add-on courses, conduction of soft skills and technical skill development programs are some of the efforts to supplement the gap in teaching-learning process and add value to the existing courses.

Some of the programmes conducted are listed below:

Sl.No	Name of the Program	Year	Collaborating Industry
1	Training and Hands-on session on DB2 V6.1	2011	IBM
2.	Training and Hands-on Session on "IBM Rational Functional Tester"	2011	IBM
3.	Training and Hands-on Session on "Rational Application Developer"	2011	IBM
4.	Training and Hands-on Session on " Lotus"	2011	IBM
5.	Training and Hands-on Session on " Tivoli"	2011	IBM
6.	Training and Hands-on Session on "Lotus"	2012	IBM
7.	Training and Hands-on Session on "Rapid Application Developer"	2012	IBM
8.	Training and Hands-on Session on "Tivoli"	2012	IBM
9.	Training and Hands-on Session on "Rapid Application Developer	2013	IBM
10.	Training and Hands-on Session on "DB2"	2013	IBM
11.	Training and Hands-on Session on " IBM RTC"	2013	IBM
12.	Training and Hands-on Session on " IBM-Bluemix Cloud Software"	2014	IBM
13.	Training and Hands-on Session on "IBM BluemiX and Watson Analytics	2015	IBM
14.	Cloud Computing , Big data Analytics, App Development and IoT using IBM-Bluemix cloud Platform and Watson Analytics	2016	IBM
15.	Rasberry Pi3.0 and IOT workshop	2016	Tenet techtronics

1.1.8 How does institution analyze/ensure that the stated objectives of curriculum are achieved in the course of implementation?

Methods of analysis to ensure the achievement of the stated objectives of curriculum are:

University examination results are analyzed. This is carried out as follows:

- After the announcement of results from the university, percentage pass in individual subjects and over all pass percentage in each semester are calculated for all disciplines separately.

- Subject in which the percentage pass is less compared to other subjects is identified.
- The staff members who were handling such subjects will be required to explain the causes and Head of the department will review the lesson plan, subject notes etc., and suggestions, if needed, are given to the faculty to improve their performance.

Students have to appear for internal assessment tests every month in a semester. Totally there will be three such tests for each subject. After the test paper evaluation, analysis of performance is carried out in the department level. Feedback from the students is taken on teachers performance.

The institute has a separate training and placement cell which comprises one staff representative from each department. Feedback is taken from placement officers, employers and alumni.

Students are encouraged to participate in paper presentation, projects, quiz competition etc, and their performances are analyzed.

After the analysis, actions are taken for effective implementation of curriculum mentioned below:

Arranging for extra classes for the weaker students.

Arranging for expert lectures.

Counseling the students for their weaknesses.

1.2 Academic Flexibility

1.2.1 Specifying the goals and objectives, give details of the certificate/ diploma/ skill development courses etc., offered by the institution.

The institute is not authorized by university to conduct any such courses. However in the interest of the students, in association with industries, R&D organizations institute will arrange programs to enrich the skill development for placement. The objectives such programs are:

To conduct value added training programs in each department.

To motivate students to pursue higher education.

To organize industrial visits.

To conduct national level technical meet for students.

To establish community development through NSS activity to foster institutional social responsibility.

To transfer technology to industries through industry institute partnership cell.

To offer post graduate program through distance education mode by IGNOU.

Details of skill development programs conducted are available in **Annexure C-1.**

1.2.2 Does the institution offer programmes that facilitate twinning/dual degree? If 'yes', give details.

Since the institution is affiliated to university it does not have autonomy to offer twinning/dual degree program. However the institute has IGNOU study centre through which different certificate courses is offered through distance education system.

1.2.3 Give details on the various institution all provisions with reference to academic flexibility and how it has been helpful to students in terms of skills development, academic mobility, progression to higher studies and improved potential for employ ability. Issues may cover the following and beyond:

1.2.3. a. Range of Core / Elective options offered by the University and those opted by the Institute

Elective options are there, as per university curriculum and well executed by the institute. Common and core subjects are given from Semester I to IV Semester. Nearly 30% of the subjects are given as electives from V semester to VIII semester.

1.2.3. b. Choice Based Credit System and range of subject options

VTU has adopted choice based credit system. The details of core subjects and scheme from 1st to 4th semester are available in VTU website ***www.vtu.ac.in.***

1.2.3. c. Courses offered in modular form

All the courses in the program are offered in modular form.

1.2.3. d. Credit transfer and accumulation facility

There is no such facility.

1.2.3. e. Lateral and vertical mobility within and across programmes and courses

At the second year engineering level the students have the freedom of mobility from one branch to other branch based on the vacancy at institute level and their performance in first year engineering. Students will not be eligible to take admission to V semester unless they clear I and II semester subjects. Similarly they will not be eligible to take admission to VII semester unless they clear III and IV semester subjects.

1.2.3. f. Enrichment Courses

Enrichment of courses with additional relevant short term courses, seminars and workshops are done. Advanced courses are offered as electives during the pre-final year UG and PG Degree Programmes.

1.2.4 Does the institution offer self-financed programmes? If 'yes', list them and indicate how they differ from other programmes, with reference to admission, curriculum, fee structure, teacher qualification, salary etc.

The institution is self-financed unaided private institution offering courses in engineering both at under graduate and post graduate level in addition to MCA and MBA programs. Institute is approved by Government of Karnataka and affiliated to VTU and AICTE, New Delhi. The institute was

accredited thrice by NBA, New Delhi and is also recognized by the Institution of Engineers (India), Kolkata.

Admissions: Admissions are made based on merit as per the guidelines prescribed by AICTE, VTU, and Government of Karnataka. The process of admissions to all the programs offered by the institution is controlled by Government of Karnataka. Government of Karnataka will conduct a Common Entrance Test (CET) and announce the rank of the students. Students in turn will opt for the required institute and CET cell will allot the students of their choice in accordance with the merit or rank. 45% of the seats are filled by CET. For the remaining 55 % of the seats, a common entrance examination called COMED-K will be conducted as per the guidelines of Government of Karnataka. Seats will be allotted by COMEDK to students as per their choice. In all admissions, the reservation policy as stipulated by Government of Karnataka is followed.

Curriculum: Visvesvaraya Technological University Belagavi designs the curriculum and since our institute is affiliated to VTU Belagavi, the same curriculum is followed by a systematic plan of action which includes semester plan, lesson plan, course file, assignments, internal assessment test schedule.

Fee Structure: The fee structure for the students admitted is fixed by the Government of Karnataka and COMED-K.

Teachers Qualifications: As per AICTE norms and regulations.

Salary: AICTE pay scale is offered to all faculty members. Qualification as per AICTE is mandatory for teaching faculty. These are duly approved by the VTU and AICTE.

The details of courses offered in the institute are given the table below:

UG Programs

Sl. No.	Course	Year of introduction
1	Civil Engineering	1979
2	Mechanical Engineering	1979
3	Electrical and Electronics Engineering	1979
4	Electronics and communication Engineering	1979
5	Textile engineering	1982
6	Computer Science and Engineering	1984
7	Electronics and Instrumentation Engineering	1991
8	Chemical Engineering	1996
9	Information Science and Engineering	2000
10	BioTechnology	2002

PG Programs

Sl. No.	Course	Year of introduction
1	Master of Computer Applications	1992
2	Master of Business Application	1996
3	M.Tech. Textile Technology	1996
4	M.Tech. Machine design	2002
5	M.Tech. Computer Science and Engineering	2002
6	M.Tech. Thermal Power & Engineering	2010
7	M.Tech. Environmental Engineering	2010
8	M.Tech. Structural Engineering	2014

Research Centers

Sl. No.	Name of the department / Research Centre	Recognized by
1	Civil Engineering	VTU Belagavi
2	Mechanical Engineering	
3	Industrial & Production Engineering	
4	Electrical & Electronics Engineering	
5	Textile Technology	
6	Computer Science & Engineering	
7	Chemical Engineering	
8	Biotechnology	
9	Biomedical Engineering	
10	Chemistry	
11	Mathematics	
12	Environment Science & Technology Study center	
13	MBA Program	

1.2.5 Does the college provide additional skill oriented programmes, relevant original and global employment markets? If 'yes', provide details of such programme and the beneficiaries.

College does not offer any skill oriented degree or diploma program. However, a number of skill orientation workshops are conducted.

All departments of the institute conduct lectures delivered by experts from various industries and research organizations. This makes the students to get exposed to novel technologies and latest developments. These programs offered by the institution were found to be useful to the students to make them employable. The activities carried out in departments are:

Soft Skill Development (SSD) programmes
Technical Skill Development (TSD)
Regular Industry visit
Seminar / conference / workshop
Poster presentation
Debate / Quiz / Assignment
Paper Contest
Design Contest
Students participation in external seminar / conference
Students participation in external Technical fest / Technical quiz
Short term courses
Advanced courses
Entrepreneurship Awareness Program

1.2.6 Does the University provide for the flexibility of combining the conventional face-to-face and Distance Mode of Education for students to choose the courses / combination of their choice If 'yes', how does the institution take advantage of such provision for the benefit of students?

No. The institution is affiliated to VTU and there is no provision for flexibility of combining the distance mode of education and conventional face-to-face education for students.

1.3 Curriculum Enrichment

1.3.1 Describe the efforts made by the institution to supplement the University's Curriculum to ensure that the academic programmes and Institution's goals and objectives are integrated?

Efforts are made by the institute to supplement the university curriculum and ensure that academic program and institution's goals and objectives are integrated. The institute supplements the university curriculum by conducting various academic activities. These are:

Arranging workshops and seminars

Encouraging students to participate in like paper presentation, projects, quiz program organized for the benefit of the students by different departments.

Training in soft skills, quantitative, logic and analytical skills.

Guest lectures.

Personality development programs.

Industrial and field visits.

Well-equipped online journal and digital library facility.

Video lectures.

Cash prizes and awards are given to rank holders, class toppers to motivate the students.

Activities through NSS participation in sports keeps the body and mind fit.

Student participation in research and consultancy project.

1.3.2 What are the efforts made by the institution to enrich and organize the curriculum to enhance the experiences of the students so as to cope with the needs of the dynamic employment market?

In order to prepare the students for placements, institute arranges special aptitude classes for the final year students.

Personality development classes are also arranged for the students to evoke a unique personality and to improve their speaking power, smartness, gestures and behavior, etc.

The training and placement cell of the institute establish communication with the HR managers of the reputed organizations to collect the updated information about the recent market trends and corporate expectations so that students can be moulded according to their needs.

Institute organizes campus connect program in collaboration with Infosys Pvt. Ltd. so that students can map their theoretical knowledge into practical implementation.

Alumni feedback and employers feedback is taken regularly to understand the recent market trends and conduct courses, workshops, training programs covering the requirements of the dynamic market.

1.3.3 Enumerate the efforts made by the institution to integrate the cross cutting issues such as Gender, Climate Change, Environmental Education, Human Rights, ICT etc., into the curriculum?

The institution is a co-educational institution and boys and girls are encouraged to work together in various activities. There is no discrimination among boys and girls in various committees constituted by the institute. This holistic approach has led to increased opportunities in employment and entrepreneurial development among the students. However the institute has a girl students counseling wing headed by senior lady staff members to take of any personnel problems of girl students.

A grievance redressal committee takes care of the grievances of the students and staff at all levels of the college.
First year students are offered two subjects beyond their specialization- Constitution of India and professional ethics and Environmental science as compulsory subjects. The main objective of this is to create awareness among students about Indian constitution and also to let them learn about the importance of environment and nature.

Institution is keen in maintaining environmental conditions by:

creating rain water harvesting,
tree plantation,
clean environment and
following Swachh Bharat Abhiyan.

Institution has a separate NSS wing, LEAD cell and Red cross youth wing all headed separately by a professor. Regular activities are carried out through these wings. Some of the activities carried out are available in **Annexure H-1.**

1.3.4 What are the various value-added courses/enrichment programmes offered to ensure holistic development of students?

Moral and ethical values: To introduce moral and ethical values to the students a platform named "SAMSKRUTHI" was started in the institute on 6/11/2007. Following events were organized under this:

Sl. No.	Activity
1	Inauguration. Address by Chief guest Swamy Veereshan and Saraswathi Sri Ramakrishna Vivekananda Ashrama, Tumkur
2	Classical Vocal recital by Smt. Bharathi Pratap and Troup, Bangalore
3	A talk by Chakravarthi Soolibele on "Vyankhithva Vikasana" (Personality development)
4	Teaching by Swamy Veereshanand Saraswathi Sri Ramakrishna Vivekananda Ashrama, Tumkur
5	A documentary film show titled "Big Family"
6	A talk by Sri H.B.Manjunatha cartoonist and recipient of Karnataka press media academy award on " Experiences and life of Mahalinga Ranga"
7	A talk by "Sri Swamy Nirbhayananda Sarswathi, President, Ramakrishna Vivekananda Ashrama Gadag, Bijapur District" on "Ethnic values in youth and social responsibility".
8	A lecture program by Sri Swami Chidananda, Director, Rajghat Educations Centre, Varnasi.

Employable and life skills & better career options: Training and placement department has organized following student training programs:

Personality Development Programmes
Feel Employable: 3 days soft skills training programme for students
Campus Placement Cracker: 8 days training programme by FACE
Mock Campus Tests and Interviews
Infosys initiated Campus Connect Training Programmes
Pre-placement talks
Interactive sessions with industrial experts & alumni
Online Assessment Tests from Freshersworld.com

Details of programs conducted by training and placement cell are given in **Annexure C-2.**

Community orientation: Institution has the following platforms for arranging community orientation program and to facilitate students and faculty to get involved in such activities.

Sl. No.	Name	Co-Ordinator/ Faculty advisor
1	National Cadet Corps (NCC) 100 Students can register	NCC Officer- Lt. Anjaneya L. H, Associate Prof., Dept. of Biomedical Engg
2	National Service Scheme (NSS)	NSS Officer – Sri. T.K.Krishnakumar, Asst. Professor, Dept of Physics
3	ISTE BIET Chapter	Faculty Advisor – Dr.B.E. Rangaswamy, HOD, Biotechnology
4	ISTE Students' Chapter	Faculty Advisor – Dr.B.E. Rangaswamy, HOD, Biotechnology
5	Computer Society of India Student Chapter	Coordinator – Prof. Ashoka K, Asst. Professor, Dept. of CS&E
6	Youth Red Cross Wing	Programme Officer – Sri. Chandrashekar S.M., Dept of Textiles
7	LEAD Cell - Promoting Leadership Qualities	Coordinator – Dr. N. S. Basavarajappa, Dept. of Mathematics

1.3.5 Citing few examples enumerate on the extent of use of the feedback from stake holders in enriching the curriculum?

Students' feedback: In each semester feedback is taken from students for each subject.

Parents' feedback: Parents are requested to give their feedbacks regarding the institute, curriculum and staff members.

Alumni feedback: Regularly institute organizes alumni meet & feedback is collected from them which facilitates for the improvement in the institute level in terms of curriculum and infrastructure.
Industry / Employer feedback: Experts from industry are consulted and involved during the process of curriculum development at the university level. Their feedback is also taken to start new courses based on market dynamics.

Formats of the questionnaire are available in **Annexure J.**

1.3.6 How does the institution monitor and evaluate the quality of its enrichment programmes?

Senior faculty members are nominated as Deans in various fields. The list of as Deans is given below:

Sl. No.	Name of faculty	Designation
1	Dr. Kankuppi Sadashivappa	Dean-Academic
2	Dr. H.B.Aravinda	Dean-Student welfare
3	Dr. B E Rangaswamy	Dean-R & D
4	Dr.K Murgesh Babu	Dean-Public Relations
5	Dr. Poornima B	Dean-Training and Placement
6	Dr. S.Kumarappa	Dean-Examinations

All Heads of department conduct regular academic audit like syllabus coverage, unit completion, attendance monitoring, lecture notes, maintenance of attendance, department activities, internal marks evaluation, quizzes, analysis of university examination results and any other work connected with academic activity. These deans regularly collect the information regarding the progress of students. Principal and the Deans monitor and evaluate the quality of program enrichment activities.

1.4 Feedback System

1.4.1 What are the contributions of the institution in the design and development of the curriculum prepared by the University?

Feedback received from various sources is analyzed and recommended to university. Many of the senior faculty members are either members of board of studies or maintain a good relationship with the members of board of studies. This has ensured in conveying our recommendations to university authorities.

1.4.2 Is there a formal mechanism to obtain feedback from students and stake holders on Curriculum? If 'yes', how is it communicated to the University and made use internally for curriculum enrichment and introducing changes/new programmes?

The institute has a mechanism to get feedback from students, parents, industry, R&D experts, alumni and other eminent personalities about the adequacy of curriculum. The opinions and suggestions are communicated to university authorities for necessary improvements. The feedback is also used to plan, organize seminars and workshops in the institute.

1.4.3 How many new programmes/ courses were introduced by the institute during the last four years? What was the reason for introducing new courses/programmes?)

In order to add technical and academic dimensions to the institute and also to fulfill the demands of the students, the institute has made an attempt to introduce new programmes and increase intake.
The courses introduced by the institution in the past four years are:

Sl. No.	Course	Year of starting	Rational for starting
1	Increase in intake in B.E Civil engineering	2015	Demand for technical man power in civil engineering
2.	M.Tech., Structural Engineering	2014	The Master of Structural engineering is a specialized program for qualified civil engineers. This course is intended to produce structural engineers who are capable of designing civil structures.

The introduction of the new course/increase in intake of existing course is done:

To meet the changing demands of the industry.
To develop skill of man power in specialized field of engineering.
To encourage research among younger generation.
To develop centers of excellence in related areas.

Any other relevant information regarding curricular aspects which the college would like to include.

Following departments have been recognized as the research centers in the institution:

Sl. No.	Name of the department/ Research Centre	Thrust areas	Recognized by
1	Civil Engineering	Concrete Technology, Environmental Engineering.	VTU Belagavi
2	Mechanical Engineering	Composite materials, Vibrations, IC Engines, Bio fuels.	
3	Industrial & Production Engineering	Composite materials	
4	Electrical & Electronics Engineering	Electrical power system	
5	Textile Technology	Natural fiber processing and textile composites	
6	Computer Science & Engineering	Artificial Intelligence, Patron recognition and machine learning, Data analytics	
7	Chemical Engineering	Bio fuels, Pharmacological studies	
8	Biotechnology	Aero micro biological studies, microbial production of cellulose, bacteriophage therapy	

Sl. No.	Name of the department / Research Centre	Thrust areas	Recognized by
9	Biomedical Engineering	Bio digital signal processing, medical image processing	VTU Belagavi
10	Chemistry	Synthetic chemistry	
11	Mathematics	Mathematical modeling in biomechanics, problems related to human diseases, differential geometry	
12	Environment Science & Technology Study center	Environmental Engineering	
13	MBA Program	Management	

About *ninety* research scholars have registered under recognized Ph.D. supervisors for full time and part time doctoral pursuit.

CRITERION -II
TEACHING - LEARNING AND EVALUATION

CRITERION II
TEACHING - LEARNING AND EVALUATION

2.1 Student Enrollment and Profile

2.1.1 How does the college ensure publicity and transparency in the admission process?

Bapuji Institute of Engineering and Technology is a self-financing institution affiliated to Visvesvaraya Technological University, Belgaum, Karnataka.

The admission for both undergraduate and post graduate programmes is made on the basis of Common Entrance Examination (CET) conducted by the Govt. of Karnataka (CET for B.E & B.Tech courses and PGCET for post-graduate courses i.e., M.Tech, MBA and MCA).

Admission notification will be announced by the Karnataka Examination Authority (KEA) for the above admissions in the State of Karnataka. The minimum eligibility criteria for applying to CET examinations is a pass in Intermediate/PUC examination with not less than 45% marks in Mathematics, Physics and Chemistry subjects.

The examination is conducted by the Government and ranks are assigned to all the eligible students, category-wise and gender wise based on the reservation policy of the state.

Detailed admission process is made available on the website of Karnataka Examination Authority and advertisement in newspapers.

After the ranks are assigned students are advised to give their choice of college and branch on the web portal.

Based on their rank, seats are allocated by the government for CET quota category seats (45%). The system is totally transparent in the admission process.

The KEA allots students to the colleges along with the name of the candidate, father name, branch to which he/she is admitted into the college.

The remaining seats are allotted as follows: Consortium of Medical, Engineering and Dental colleges of Karnataka (COMEDK) conduct their own all India entrance examination and based on the ranks obtained in this test, 30% seats will be allotted under this category. Another 25% seats will be filled up by the private managements based on eligibility criteria set by the Government by paying the prescribed higher fee by the management.

The admission list made by management will be approved by the Government after the admission procedure is over.

The students after admitting into the respective colleges undergo an orientation programme to get acquainted with the facilities available in the colleges.

After the admission process is completed, the Government of Karnataka gives a cutoff date and the affiliating university provides an academic calendar which contains details about date of commencement of classes, monthly test schedules, dates of semester closure, exam dates etc.

2.1.2 Explain in detail the criteria adopted and process of admission (Ex. (i) merit (ii) common admission test conducted by state agencies and national agencies (iii) combination of merit and entrance test or merit, entrance test and interview (iv) any other) to various programmes of the Institution.

The Engineering Admission process in Karnataka is carried out by the Karnataka Examination Authority for Government quota seats through CET and COMEDK. The private managements will admit the students based on the eligibility criteria prescribed by the Government for management seats. The Institute is not involved in the centralized admission process of the State Government. Institute follows the admission rules, regulations and guidelines stipulated by the Karnataka State Government.

The admission procedure:

Admission to Undergraduate Programme: Forty five percent of the students are admitted through the CET conducted by Karnataka Examination Authority. Thirty percent of the admissions are through the entrance test conducted COMEDK. The rest twenty five percent of the admissions are through Management Quota.

Admission through KEA: A candidate, who has passed the qualifying examination (i.e., PUC) with Physics and Mathematics as compulsory subjects along with Chemistry /Bio-Technology / Biology / Electronics / Computer Science as optional subject and English as one of the languages of study, securing minimum of 45% marks in the optional subjects is eligible for Engineering / Technology courses; 40% of marks in qualifying examination in case of SC, ST, Category-I and OBC Category candidates. Based on the performance of the candidates in Physics, Chemistry and Mathematics in both Common Entrance Test and the qualifying examination, the engineering rank list will be prepared and published.

Admission through COMED-K: Both Karnataka and non-Karnataka candidates are eligible for admission under this quota. The qualifying examinations prescribed for admission for B.E. / B. Arch is second PUC or 10+2, Higher Secondary or equivalent examination recognized by State / Central Government; the last two years of study shall comprise of Physics, Chemistry and Mathematics with English as a compulsory subject. The General Merit candidates should have passed with a minimum aggregate of 45% marks (40% in respect of SC, ST and OBC candidates of Karnataka State in Physics, Chemistry and Mathematics) and should have passed these subjects individually. Physics and Mathematics are compulsory subjects along with Chemistry or Bio Technology or Biology or any other technical vocational courses as one of the optional subjects. However, changes, if any, in the eligibility criteria by the AICTE will be adapted.

Admission through Management Quota: Twenty five percent of the sanctioned intake is through this quota. Candidates who satisfy KEA eligibility criteria are eligible to be admitted under management quota.

Admission to Post-Graduate courses: For admission to M. Tech course, candidates need to qualify GATE or PGCET examination conducted by KEA.

Candidates with a B.E/B. Tech degree in the relevant discipline with at least 50% marks in aggregate are eligible.

Admission to MBA/MCA: Admission is only through competitive entrance tests PGCET/COMED-K. It is open to candidates who have a 3-year bachelor degree from a recognized university with not less than 50% marks in aggregate of all the years of the degree examination. In case of candidates from Karnataka belonging to SC/ST and Category-1, students having 45% of aggregate marks are eligible for admission.

Admission to Ph.D.:
Notification for admission to the Ph.D. programs for the research centers of the college is displayed in the VTU website and published in leading news papers. After scrutinizing the applications, candidates will be called for written tests followed by interviews. Selected candidates will be intimated through letters/e-mails. The candidates are allowed to register for Ph.D. in their respective research centers.

2.1.3 Give the minimum and maximum percentage of marks for admission at entry level for each of the programmes offered by the college and provide a comparison with other colleges of the affiliating university within the city/district.

Course wise minimum and maximum ranks of students admitted in B.E. & M.Tech programs:

Sl. No.	Programme	Year of admission	Maximum KCET Ranks of admitted Students	Minimum Ranks of admitted Students
1.	Civil Engg.	2015-16	3897	52325
		2014-15	8479	66127
		2013-14	7062	65326
		2012-13	5753	76097
2.	Mechanical Engg.	2015-16	12845	60021
		2014-15	7084	58883
		2013-14	7729	48310
		2012-13	4993	43829
3.	Electrical & Electronics Engg.	2015-16	9661	64469
		2014-15	8437	43258
		2013-14	7484	89263
		2012-13	5635	40417
4.	Chemical Engg.	2015-16	33372	54237
		2014-15	29356	84507
		2013-14	20461	74407
		2012-13	3381	74580
5.	Computer Sc.& Engg.	2015-16	2054	83891
		2014-15	1678	71094
		2013-14	1029	63296
		2012-13	6404	72688
6.	Information Sc.& Engg.	2015-16	13260	106762
		2014-15	13102	94690
		2013-14	12333	90602
		2012-13	11741	63420

Sl. No.	Programme	Year of admission	Maximum KCET Ranks of admitted Students	Minimum Ranks of admitted Students
7.	Textile Technology	2015-16	51144	106733
		2014-15	30829	79980
		2013-14	16696	87329
		2012-13	38314	81190
8.	Bio Technology	2015-16	33758	110569
		2014-15	18253	75225
		2013-14	31219	88897
		2012-13	23551	75419
9.	Electronics & Communication	2015-16	1467	65746
		2014-15	1706	60562
		2013-14	1825	43356
		2012-13	1076	46201
10.	Electronics & Instrumentation Engg.	2015-16	32367	84591
		2014-15	22367	71868
		2013-14	22678	67863
		2012-13	15809	60014
11.	Biomedical Engg.	2015-16	38590	104524
		2014-15	31713	85435
		2013-14	18083	83873
		2012-13	7616	62047
12	M.Tech. (CS&E)	2015-16	5906	14561
		2014-15	1715	16493
		2013-14	956	7257
		2012-13	32	5472
13	M.Tech.(MachineDesign)	2015-16	3239	12688
		2014-15	2912	8591
		2013-14	209	8033
		2012-13	32	2384
14	M.Tech.(Thermal power)	2015-16	5807	13877
		2014-15	3486	13438
		2013-14	2455	10906
		2012-13	1366	13437
15	M.Tech.(Environmental)	2015-16	9352	12093
		2014-15	9686	16598
		2013-14	1731	15317
		2012-15	1823	19826
16	M.Tech.(Structures)	2015-16	4308	10564
		2014-15	3798	16459
		2013-14	-----	-----
		2012-13	-----	-----
17	M.Tech. (Textiles Tech.)	2015-16	-----	-----
		2014-15	-----	-----
		2013-14	-----	-----
		2012-13	16965	16965
18	MCA	2015-16	314	4231
		2014-15	565	4248
		2013-14	239	4207
		2012-13	472	4466

2.1.4 Is there a mechanism in the institution to review the admission process and student profiles annually? If 'yes', what is the outcome of such an effort and how has it contributed to the improvement of the process?

The admission process is under the control of the State Government, COMEDK and managements. The college maintains student admission details in office and admission section of the institution.

The institute also maintains students' previous history records with regard to their, family background, education details in the college. The file also includes the students' interest in co-curricular and extracurricular activities. These details will serve as input for improvement of the student in the first year and subsequent years.

Institute provides infrastructure for CET Admission cell every year so that students from across the state can visit BIET during document verification process. This would be like a marketing activity of the institute to attract high quality students.

Some branches like bio technology, textiles, E&I and chemical engineering have seen lower admissions over the years. Based on the analysis of admissions, steps are taken to improve the admissions through articles in news papers, special programs, exposure programs to pre university teachers to make them aware of the advantages and job opportunities in these areas. These activities have resulted in the increased intake in the departments concerned.

Faculties have participated as resource persons in orientation program conducted by many organizations for the benefit of pre university students.

Most of the events conducted in the institute are published in newspaper to build image of the institute.

Training and Placement activities are effectively monitored and companies of repute are invited for placements. Experts in engineering domain and well known dignitary are invited to build the brand image of the institute.

The admission section will identify the requirements of these students with the help of a mentor who will guide them in the following way:

- Additional bridge courses and extra tutorial classes for subjects like Mathematics, Physics, Chemistry and English are arranged after the regular class hours periodically.
- The students' counseling process will be done for all the students in the institute. For every 15 students one faculty member is allotted for counseling.
- The parents are regularly informed of the performance of their wards regarding their attendance position, performance in tests, regularity, behavior in the dept. etc. through phone calls, emails, registered letter and through personal interaction.
- The Institute identifies meritorious students and awards are given at the end of the academic year.

The above efforts have yielded good results in all the engineering programs.

2.1.5 Reflecting on the strategies adopted to increase/improve access for following categories of students, enumerate on how the admission policy of the institution and its student profiles demonstrate/reflect the National commitment to diversity and inclusion

SC/ST and OBC: Benefits are provided to the weaker sections of society as per the policies of state government. Students belonging to the SC/ST/OBC categories are admitted as per the norms of the state government. SC/ST students are provided with scholarship or fee reimbursement.

Women: Female population is approximately 60% and hence they take leading roles in almost all activities.

Different categories of persons with disabilities: Persons with disabilities are taken due care and are provided with extra facilities for their comfortable stay in the campus.

Economically weaker sections: Financially weaker students are supported with scholarships as per state government norms wherever applicable.

Minority community: Students from minority communities form an inseparable part of our student population.

2.1.6 Provide the following details for various programmes offered by the institution during the last four years and comment on the trends. i.e. reasons for increase / decrease and actions initiated for improvement.

Sl. No.	Name of Programme	Year	Number of students applications	Number of students admitted	Demand Ratio
UG Programmes					
1.	Bio Technology	2012-13	NA	30	NA
		2013-14	NA	27	
		2014-15	NA	25	
		2015-16	NA	31	
2.	Civil Engineering	2012-13	NA	59	NA
		2013-14	NA	60	
		2014-15	NA	114	
		2015-16	NA	119	
3.	Computer Science & Engineering	2012-13	NA	119	NA
		2013-14	NA	115	
		2014-15	NA	114	
		2015-16	NA	116	
4.	Chemical Engineering	2012-13	NA	22	NA
		2013-14	NA	30	
		2014-15	NA	23	
		2015-16	NA	21	
5.	Electrical and Electronics Engineering	2012-13	NA	60	NA
		2013-14	NA	42	
		2014-15	NA	47	
		2015-16	NA	44	
6.	Electronics and Communication	2012-13	NA	118	NA
		2013-14	NA	118	
		2014-15	NA	94	
		2015-16	NA	100	

Sl. No.	Name of Programme	Year	Number of students applications	Number of students admitted	Demand Ratio
7.	Electronics and Instrumentation	2012-13	NA	27	NA
		2013-14	NA	29	
		2014-15	NA	23	
		2015-16	NA	16	
8.	Information Science & Engg.	2012-13	NA	109	NA
		2013-14	NA	88	
		2014-15	NA	84	
		2015-16	NA	116	
9.	Mechanical Engineering	2012-13	NA	119	NA
		2013-14	NA	119	
		2014-15	NA	103	
		2015-16	NA	97	
10.	Textile Technology	2012-13	NA	20	NA
		2013-14	NA	30	
		2014-15	NA	29	
		2015-16	NA	22	
11.	Biomedical Engineering	2012-13	NA	18	NA
		2013-14	NA	15	
		2014-15	NA	14	
		2015-16	NA	07	
PG Programmes					
1.	M.Tech (Machine Design)	2012-13	NA	18	NA
		2013-14	NA	15	
		2014-15	NA	16	
		2015-16	NA	13	
2.	M.Tech (Thermal Power Engg.)	2012-13	NA	17	NA
		2013-14	NA	14	
		2014-15	NA	14	
		2015-16	NA	08	
3.	M.Tech (CS&E)	2012-13	NA	18	NA
		2013-14	NA	18	
		2014-15	NA	24	
		2015-16	NA	18	
PG Programmes					
4.	M.Tech (Environmental Engg.)	2012-13	NA	18	NA
		2013-14	NA	17	
		2014-15	NA	14	
		2015-16	NA	14	
5.	M.Tech (Textile Technology)	2012-13	NA	03	NA
		2013-14	NA	01	
		2014-15	NA	--	
		2015-16	NA	--	
6.	M.Tech (Structural Engg.)	2012-13	NA	--	NA
		2013-14	NA	--	
		2014-15	NA	24	
		2015-16	NA	24	
7.	MCA	2012-13	NA	30	NA
		2013-14	NA	40	
		2014-15	NA	32	
		2015-16	NA	15	
8.	MBA	2012-13	NA	170	NA
		2013-14	NA	120	
		2014-15	NA	113	
		2015-16	NA	143	

NA: Not available

The reasons for the increase or decrease in admissions are as follows:

Increase in the number of colleges coming up every year and variation in the intake for various programs.
Lack of English communication among the students.
Changes in Govt. policies with regard to fee structure and admissions.
Lack of infrastructure facilities in line with latest technology.
Lack of placement opportunities.

Action initiated for improvement:

Strengthening Training and Placement activities.
Conducting special classes for students with poor technical background.
Improving the quality of teaching-learning processes through student interactive sessions, international/national level conferences, lectures and workshops.

2.2 Catering to Student Diversity

2.2.1 How does the institution cater to the needs of differently-abled students and ensure adherence to government policies in this regard?

Policies adopted by Govt. of Karnataka/VTU for differently–abled students are strictly followed. Institute makes special seating arrangements for differently abled students in the university examinations.

Additional special arrangements are made in the library for these students by the Librarian. Additional library books are also issued to these students so as to enable them not to visit library frequently.

2.2.2 Does the institution assess the students' needs in terms of knowledge and skills before the commencement of the programme? If 'yes', give details on the process.

Provision has been made for assessing the students' knowledge and skills before the commencement of the program. The qualifying marks and overall ranking in the merit list of the students gives an idea about the caliber of the students for entry-level analysis. Institute organizes orientation programme for newly admitted students and to help them to understand the engineering curriculum.

Special coaching and tutorial classes will be conducted for those weak students after the regular class hours to enable them to understand the subjects better and to perform better in the examinations.

Students from rural background are provided with special coaching classes in English and soft skills to improve their communication skills, vocabulary and presentation skills.

2.2.3 What are the strategies adopted by the institution to bridge the knowledge gap of the enrolled students (Bridge/Remedial/Add-on/Enrichment Courses, etc.) to enable them to cope with the programme of their choice?

The institution has mechanisms to identify the gap in the syllabus to understand engineering curriculum through following programs:

Special classes on subjects such as Mathematics, English and basic engineering subjects are conducted to serve as bridge courses.

Additional programmes /classes are conducted on communication skills / personality development for all the students every year.

Programs such as technical seminars, conferences, guest lectures, short term courses, workshops are conducted to enrich the knowledge of students.

Open elective subjects are offered in all the departments so as to enable the students to enhance the knowledge beyond their subject specialization.

Remedial classes are conducted for students who exhibit poor performance in internal tests.

Technical skills based on training programme are conducted in major departments and few of them are

- CNC training, modeling and analysis of software training (Mechanical department)
- Material testing training programme (Civil Engineering)
- Fashion designing, wet processing training programme (Textile department)
- Software training programs (CS and E department)
- Biotechnology hands on programme (Biotechnology department)
- Structural design programme (Civil engineering department)
- Computer software training (IS & E and E & C department)
- PLC and Embedded technology training (E&C department)
- Electrical safety / maintenance training programme (E & E)

Sl. No.	Year of Study	Training Programme
1.	First Year	1. Feel Employable Programme
2.	Second year	1. FEEL Employable Programme 2. FEEL Teacher Training Programme 3. TCS Specific Training Programme
3.	Third Year	1. Focus Academy for Career Enhancement 2. Mock Tests
4.	Fourth Year	1. Resume Preparation 2. Group Discussions, Mock Tests, Mock Interviews 3. Coaching for Recruitment and Empowerment of Action

2.2.4 How does the college sensitize its staff and students on issues such as gender, inclusion, environment etc.?

Institute provides equal opportunity for all to participate in administrative, co–curricular and extra-curricular activities. The Institute also deputes faculties for orientation courses and higher studies (post graduation and Ph.D.). Faculty members are nominated in committees without any discrimination (gender, caste, religion).

Male and female staff members, faculty members and students are treated equally.

Institution has established "Womens'cell" and "Grievance Redressal Cell" which address the issues of women and other weaker students. These cells are monitored by senior faculty members to protect the interests of women students and employees.

All kinds of academic help is provided to the students for the socially weaker section students.

Institute arranges special social activities to maintain good social environment under National Service Scheme (NSS) such as Blood Donation camps. Every year a special camp of NSS is organized in rural areas. The objectives of such camps are to create awareness among villagers about cleanliness, rainwater harvesting and women education.

The institute offers a lush green campus for its students and faculties for a conducive academic environment.

Celebration of "Teachers' day", "Engineers' day", "Environment Day" "Sadbhavana Diwas", "Constitution Day" "Science Day" are common regular features conducted in the institute involving all the teachers and students.

The institute brings out an yearly magazine called "TECHNOWAVE" and a half-yearly news Letter "BIETech Voice" that provides platform to the students and staff to express their views on social awareness, educational issues and promote publication of their literary talents.

2.2.5 How does the institution identify and respond to special educational/learning needs of advanced learners?

Advanced learners are identified by their performance in the class room, performance in the end semester examinations, regularity in submission of class works and assignments, punctuality and personal interactions, participation in departmental activities, prizes won in co-curricular and extracurricular activities etc.

Students are encouraged to take up project work or internships in industries or R&D establishments, during VII and VIII semester of the programme.

Students are encouraged to undertake industry-sponsored projects and mini projects on advanced topics.

Students are encouraged to publish articles in journals and magazines.

Students are encouraged to participate in project exhibitions, paper presentations, NSS camps, industrial visits etc.

Advanced learners are advised to undertake GATE, GRE, CAT examinations and are guided for higher studies.

Participation of students in value added courses – content beyond the syllabus conducted within the institute and outside the campus.

Advanced learners are felicitated with cash prizes and medals at the end of each academic year and the University Rank holders are encouraged with cash awards and certificates.

Financial assistance to students who participate in the seminars and conferences outside the parent institute for technical paper presentations.

2.2.6 How does the institute collect, analyze and use the data and information on the academic performance (through the programme duration) of the students at risk of drop out (students from the disadvantaged sections of society, physically challenged, slow learners, economically weaker sections etc. who may discontinue their studies if some sort of support is not provided)?

SC / ST / OBC / Minority students are given benefits of reservation in terms of admission into engineering courses and scholarships as per government norms. The student counselors appointed in each department analyze the results after every semester examination. One counselor is appointed for every 15 students and he/she takes care of the students' needs and requirements and counsels them after every test and exam to analyze their performance in the examination. The Department head takes necessary steps to improve the performance of those slow learners and weak section of the students by arranging extra coaching classes, conducting special tests, special classes in mathematics, English/soft skills and difficult engineering subjects to improve their overall performance. The economically weaker sections are financially supported by the management by providing scholarships, books etc. Institute also tries to identify inherent skills in the physically challenged persons and motivate them to excel in related areas.

2.3 Teaching-Learning Process

2.3.1 How does the college plan and organize the teaching, learning and evaluation schedules? (Academic calendar, teaching plan, evaluation blue print, etc.)

The institute prepares an annual academic calendar for the day-to-day academic process with respect to university academic schedule. The calendar specifies the dates of college reopening, monthly tests, holidays, examination schedules and schedule of extra and co-curricular activities etc.

All the faculty members maintain an attendance register for every subject which contains register numbers, names, attendance details, period wise syllabus coverage, periodical test marks, attendance percentage and internal assessment marks. Subject allotment is normally done well in advance such that faculty members, especially new comers, get sufficient time for preparation of necessary teaching aids.

Each faculty member maintains a course file which contains the prescribed syllabus of the course, detailed work plan, study material, experimental write-ups, previous year university question papers, assignments, quiz programmes, e-learning material, etc. VTU syllabus, referring to departmental academic calendar. Internal Assessment tests are conducted strictly as per the guidelines of VTU, the affiliating university. The tests are conducted periodically and the evaluation of the internal assessment books done immediately after the test schedule and the performance of the students is notified on the notice board and the same is informed to their parents through progress reports, emails and phone calls. Students are given an opportunity to see the answer books as well as the scheme of evaluation and seek clarifications, if any.

2.3.2 How does IQAC contribute to improve the teaching –learning process?

The college has recently constituted an Internal Quality Assurance Cell (IQAC). It is headed by a coordinator and one member drawn from each department as member of IQAC. IQAC provides the development and application of quantity bench marking for various academic and administrative activities of the Institution. Regular meetings are conducted by this body for planning and execution of teaching-learning methodology. This body will obtain feedback from all the stakeholders and analyze and submit report to the Principal for appropriate action. The Principal based on the report will take remedial measures in organizing tutorial classes / extra classes / Quizzes/ supportive classes and any other as suggested by the above body. Through IQAC teaching-learning process is monitored and audited for the imparting quality education to students. It certainly helps to take up remedial measures to improve the teaching-learning methodology.

2.3.3 How is learning made more student-centric? Give details on the support structures and systems available for teachers to develop skills like interactive learning, collaborative learning and independent learning among the students?

The Institute offers a conducive environment for improving students' participatory and interactive skills.

Multimedia teaching aids like animated videos, demo videos, PPT's are incorporated in the day-to-day teaching process to enhance the understanding of the subject.

The college central library is well equipped with technical magazines, project reports, seminar reports, journals and NPTEL lecture videos.

Group activities are encouraged among students to promote collaborative learning. Quiz programs are conducted periodically by students.

Industrial visits and technical courses are arranged throughout the year to give hands-on experience to students.

Every department has its own Forum and through this forum number of activities such as seminars, quiz, workshops and technical competitions will be held from time to time. The faculty and students interact and participate jointly in all these activities.

The students undertake mini projects and main projects in all the departments to develop their self-learning and problem solving capabilities.

Students are encouraged to undergo in-plant training in industries, internships and teaching practices.

Guest lectures by experts from the industry and add-on courses are organized by the respective departments, to cover content beyond syllabus.

Memorandum of Understanding (MOU) is signed with leading industries to bridge the gap in the curriculum.

State level and National level symposia are organized by the students in all the departments. These programs will nourish the students in terms of their managerial and organizational skills apart from enriching their knowledge on latest topics.

The institute also encourages the students to conduct a state level cultural fest called DAVANA to nourish the extra-curricular activities of the students.

2.3.4 How does the institution nurture critical thinking, creativity and scientific temper among the students to transform them into life-long learners and innovators?

Institution honors the concept of critical thinking, creativity and scientific temper among the students and encourages them accordingly. Students are encouraged to prepare and present papers in national and international conferences within the college and outside the institute. They are provided with financial assistance to present their papers. Apart from the paper presentations and publications, they carry out mini and main projects to explore their design and problem solving abilities within the college or either in industry or R&D labs. In addition, eminent personalities, industrial experts, entrepreneurs are invited to the college to share their success stories with the students.

Students are encouraged to participate in research work, consultancy work carried out by different research centers.

Students are encouraged to convert their innovative ideas into prototypes/processes through their projects; some of these ides which are commercially feasible are taken to the next level of engineering through the product development cell.

The thrust on product development activities in the campus is through the students' project only.

Entrepreneurship skill development activities are organized in the college to encourage budding entrepreneurs.

2.3.5 What are the technologies and facilities available and used by the faculty for effective teaching? Eg: Virtual laboratories, e-learning - resources from National Programme on Technology Enhanced Learning (NPTEL) and National Mission on Education through Information and Communication Technology (NME-ICT), open educational resources, mobile education, etc.

Modern multimedia teaching aids such as LCD projectors, OHP, CD-ROM, internet enabled computer systems are available in most of the class rooms and other learning centers namely laboratory, library etc. E-learning resources such as NPTEL are also available for the use by the faculty. Students are encouraged to use computer software for meaningful analysis of their design and experimental data in the laboratories. Institute also has e-books, e-journals which are valuable to the students. Institute supports teachers for membership of professional societies. Most of the teachers are members of societies like IE (I), ISTE, AMIE, etc. ICT enabled methods are extensively employed by the teachers in many departments.

The Institute has membership of DELNET consortium where the faculty and students can access over 750 scientific journals and 850 engineering journals. High speed Internet connectivity in the campus enables the students and faculty to access e-resources, free journal, e-books through VTU consortium.

2.3.6 How are the students and faculty exposed to advanced level of knowledge and skills (blended learning, expert lectures, seminars, workshops etc.)?

Institute encourages faculty members in all the departments to participate in faculty Development Programmes (FDPs), Summer/Winter Schools, Seminars, Workshops and special lecture programmes conducted by premier institutions

like IITs, IISc, and NITs to update their subject knowledge and acquire expertise in their own field of specialization. Special orientation programmes are organized for new faculty members to get acquainted with the college environment and the academic scenario of the institute. Faculty members are provided with financial assistance to undertake R&D projects in their specialized areas.

Students are encouraged to participate in national level symposiums/workshops/seminars to participate and to present papers. They are also encouraged to organize the above programs within the institute with a financial aid so as to enable them to develop leadership qualities and managerial/organizational skills.

These are done through skill based training programmes, certificate courses, through participation in engineering and other competitions conducted by IBM, TCS etc and through participation in project competitions.

2.3.7 Detail (process and the number of students /benefitted) on the academic, personal and psycho-social support and guidance services (professional counseling/mentoring/academic advice) provided to students?

Institute has a systematic student counseling procedure. For every 15 students a teacher is appointed as a mentor/counselor to counsel the students and record their improvements from time to time. During counseling, the students are encouraged to discuss their problems related to academics, personal etc. The weak students are advised suitably to improve their performance in tests and examinations. The counseling report will be monitored by the HOD and the report of poor students will be informed to their respective parents through emails, phone calls. The counselor also identifies weak students and accordingly remedial classes are arranged.

The counseling rendered by the counselor is recorded and monitored by the head of the department. Such counseling has yielded fruitful results to students in terms of improvement of pass percentage and employability of students. The students get academic and personal guidance from the teachers concerned apart from the counselor. There is a full time training and Placement Dean supported by placement officers/coordinators who train the students in terms of soft skills and arrange training programs by experts on industrial/ technical skills.

2.3.8 Provide details of innovative teaching approaches/methods adopted by the faculty during the last four years? What are the efforts made by the institution to encourage the faulty to adopt new and innovative approaches and the impact of such innovative practices on student learning?

Vast syllabus, advanced topics and limited time availability necessitate innovative teaching approaches. The Institute always gives full support to the faculty in adopting various innovative teaching practices.

The Institute encourages the faculty to use proactive teaching methodologies such as role-play, quiz, brain storming, group discussion and NPTEL lecture videos for effective instruction delivery.

Faculty members make question banks which help students prepare for their examinations.

Power point presentations are available for all subjects for easy communication of complex concepts covering all difficult topics.

The Institute has class rooms with facility of LCD projectors and fully equipped laboratories for effective instruction delivery to students.

Faculty members are deputed for participating in innovative teaching learning programmes like WIPRO Mission10X.

Senior faculty mentors junior faculty by sharing their knowledge about effective teaching.

The institution also sets aside a portion of the money from its budget towards R&D activity. Such a step is to enhance the independent thinking of the faculty and enhance their knowledge and pass on to young students.

Departments are provided with laptops, digital library facility etc, to download online lectures, study materials from the internet and pass them on to students.

Institute deputes faculty for teaching learning program organized by AICTE, VTU, and DRDO. Arrangements are also made to telecast special webinars through EDUSAT on related topics.

Students are encouraged to think independently and design and fabricate experiments in the laboratory. Innovative learning methods like real time demonstrations, comparison of charts, picture quiz, group discussions, and circuit debugging are encouraged.

Many faculty involve students in their research work, consultancy work.

Students are advised to approach industries for practicals, internship and technical training.

Distinguished alumni are invited to the department to interact with teachers on state of art technologies.

These practices have yielded better results in universities examinations and improvement in the placement. The analysis of results and placement details are available in **Annexure A and C**

2.3.9 How are library resources used to augment the teaching-learning process?

The institution offers an excellent library facility for the students and faculty. The Institute faculties use the library resources to enhance the teaching-learning process in following ways:

Housed in a separate well ventilated building, it offers resources such as text books, reference books, journals, periodicals, project reports of UG/PG/Ph.D., newspapers, digital library facilities.

The students and faculty effectively use the internet and they liberally share their knowledge on innovative resource topics, data gathering with the other learners.

The central library facilities are available for the students and staff from 9.00 a.m. to 9.00 p.m. on all working days and from 9.00 a.m. to 12.30 p.m. on holidays.

It also offers internet facility for the students and faculty to access e-journals, e-learning materials from distant sources to update their knowledge.

Additional books and reference materials are issued to students and faculty for preparation of presentations/technical papers/study materials.

A separate reading room is provided exclusively for the students to study and prepare their notes during working hours and during examinations.

Newspapers and other related magazines are available in the reading room of the library.

Question paper sets of all subjects of previous University examination are available in the central library.

Reprographic facility is provided within the library for printouts from journals and text books.

In addition to the central library facility, each department has its own departmental library where number of subject related text books/project reports/seminar reports and other study materials are provided to the students and faculty members to enhance their knowledge and update their subject areas from time to time.

2.3.10 Does the institution face any challenges in completing the curriculum within the planned time frame and calendar? If 'yes', elaborate on the challenges encountered and the institutional approaches to overcome these.

Generally the institute does not find any difficulty in completing the curriculum within the planned time frame and calendar. The academic committee headed by the Academic Dean and Principal periodically monitor the academic activities of the institute in terms of planning of semester classes, arrangement of internal assessment tests, monitoring of teacher's regularity and quality of teaching etc. These procedures enable the academic committee to monitor the overall curriculum completion within the stipulated duration prescribed by the university. However, in the event of change of syllabus/curriculum pattern modification, the academic committee takes suitable measures to overcome the problems by appointing new teachers, arranging extra classes for students after regular class hours, updating the knowledge of teachers etc.

With module system being introduced, teachers are advised to take extra classes to deliver the full content of the syllabus effectively.

2.3.11 How does the institute monitor and evaluate the quality of teaching learning?

Each department has a mechanism of taking feedback from the students about the teacher in every subject. The duly filled in feedback forms are evaluated by an expert committee and ratings are given for each faculty member. Poor ratings are analysed and the teacher is advised to improve upon his/her performance. Institute also has a mechanism for online evaluation of students and university examination results regularly. Senior faculty members will monitor the teaching of junior faculty and share their expertise with the junior faculty.

2.4 Teacher Quality

2.4.1 Provide the following details and elaborate on the strategies adopted by the college in planning and management (recruitment and retention) of its human resource (qualified and competent teachers) to meet the changing requirements of the curriculum

The Institution recruits faculty members as per the guidelines of AICTE and VTU at the rate of one teacher for every 15 students. Staff requirement for each

department is collected well in advance by the office of the Head of the institution and management approval is also obtained in this regard. The college advertises in the leading newspapers in order to reach out to the best faculty from the country. The interviews are conducted by a panel comprising the management, Head of the institution, Head of the department, subject expert, and senior faculty from the department. The college finds new faculty members through the reference from other teachers and experts in the area. Time bound and performance based promotions is helping the retention of talented faculty. Faculty are provided with monetary incentives through research and consultancy.

The institution extends AICTE latest pay scales to its entire faculty with satisfactory allowances. Maternity leave is sanctioned to women employees as per norms. Faculties are encouraged to pursue higher studies such as M.Tech. and Ph.D. with financial assistance. Teachers who desire to attend national and overseas conferences are encouraged with financial assistance and sabbatical leave. The details of the qualifications of the staff members of the institute are available in the table given below:

Highest Qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent Teachers							
D.Sc./D.Litt.	--	--	--	--	--	--	--
Ph.D.	15	04	13	01	06	01	40
M.Phil.	--	--	--	--	--	--	--
PG	--	01	11	02	51	29	94
Temporary Teachers							
Ph.D.	02	--	--	--	01	--	03
M.Phil.	--	--	--	--	--	--	--
PG	--	--	--	--	53	55	108
Part Time Teachers							
Ph.D.	--	--	--	--	--	--	--
M.Phil.	--	--	--	--	--	--	--
PG	--	--	--	--	03	01	04

2.4.2 How does the institution cope with the growing demand/ scarcity of qualified senior faculty to teach new programmes/ modern areas (emerging areas) of study being introduced (Biotechnology, IT, Bioinformatics etc.)? Provide details on the efforts made by the institution in this direction and the outcome during the last three years.

The institute has made its sincere efforts to recruit best faculty in the fields of IT and Biotechnology. Number of seminars and workshops are conducted to enhance the teaching abilities and knowledge of teachers by inviting subject experts from industries and R&D centres of national and international repute. Faculties are encouraged to participate in Faculty Development Programmes conducted by premier institutes like IITs, IISc etc.

Faculties are encouraged to participate in national conferences and workshops to learn latest trends in emerging areas of technology. Faculty members are encouraged to attend conferences and workshops in inter-disciplinary and multi-disciplinary subjects.

2.4.3 Providing details on staff development programmes during the last four years elaborate on the strategies adopted by the institution in enhancing the teacher quality.

a) Nomination to staff development programmes

Academic Staff Development Programmes	Number of faculty nominated													
	BT	Civil	Chemical	CSE	E&C	E&E	E&I	ISE	Mech.	Textile	BM	Chemistry	Physics	MCA
Refresher course	4	--	6	--	02	-	06	4	--	--	04	--	--	3
HRD Programmes	2	2		10	25	01	03	18	--	10	05	--	--	--
Orientation Programmes	4	1	2	30	04	-	06	1	--	--	34	03	--	--
Staff training conducted by the university	1	--	1	3	10	-	--	0	05	--	11	--	--	4
Staff training conducted by the other Institutions	3	--	1	60	38	04	06	8	02	--	32	01	--	4
Summer/Winter schools, Workshop, etc.	4	2	3	27	12	10	06	12	25	--	02	03	--	23

b) Faculty Training programmes organized by the institution to empower and enable the use of various tools and technology for improved teaching-learning:

Teaching learning methods/approaches

Programmes organized under this category:

WIPRO Mission 10X teaching methodologies and Infosys Campus Connect Teaching methodologies.

Use of smart board, PPT, VTU EDUSAT learning practices are employed as and when needed.

Preparing notes and manuals.

Delivery of the contents through multimedia presentations.

Arranging practical/demo sessions.

Innovative teaching ideas through Wipro Mission10X session plans by conducting case studies, group discussions, quiz.

To Exposure to current technology/Industry needs faculty are deputed to workshops, STTPs etc.

CFD Software.

Counseling, Tests, Tutorial classes, Remedial classes etc.

Handling new curriculum (Programmes organized under this category)

CBCS curriculum framed during 2015-16.

Orientation programme: for subjects Thermodynamics was organized during 2012-13.

Teaching learning method: student participation in problem Analysis & solving during 2014-15 and 2013-14.

Arranging hands on workshops as a refresher course on the new subjects.

Arranging invited talks from industrial experts.

Arranging industrial visits.

Content/knowledge management

Office automation software is under consideration for procurement for managing students' database and other related operations.

Use of modern teaching aids such as presentations, LCD projectors, OHPs, laptops and NPTEL video lectures.

The faculty members and students are encouraged to access e-resources in the form of journal and reference books available in the college library.

Selection, development and use of enrichment materials

Web Programming, Data mining and warehousing, Operating Systems, Algorithms, Business Intelligence, Computer Networks, Java Programming, NPTEL Learning Materials, Object Oriented Modeling and design, Computer System performance Analysis, Cloud Computing, Web2.0 and Rich Internet Applications.

Use of Solid Edge software for Chemical Engg. Drawing.

CHEM CAD software demonstration and extensive usage for project work and design subjects during 2013-14, 2014-15 and 2015-16.

Class room PPT and use of live videos through internet by faculty every year done 2-3 times

Delivery of the contents through multimedia presentations.

Preparing questionnaires.

Solidworks, ANSYS, CFD.

CNC training through software and machines.

Arranging video shows on special & advanced topics.

Assessment

Assessment of student's understanding is carried out through in semester tests, tutorials, mock practical examination and in semester orals.

Feedback is collected from students twice in a semester regarding instruction delivery.

When new software is introduced, concerned staff members are given training on its operation.

When digital evaluation was introduced by the affiliating university, teaching staff members were given training on its operation.

Audio Visual Aids/multimedia

Most of the classrooms and seminar halls in the Institute are equipped with LCD projectors for effective teaching learning process.

Faculty members are encouraged to use **EDUSAT/NPTEL,** videos and course materials in day to day teaching. E-tutorials (VTU EDUSAT programs), e-learning materials (VTU e-learning website), webinars are made available to students and faculty.

OERs (Open Educational Resources)

Students and faculty are encouraged to refer to e-Journals, make use of Digital library for teaching, seminars & project work.

Teaching learning material development, selection and use

A variety of teaching aids are developed by faculty members of the institution such as multiple choice questions, quiz programmes for normal and advanced learners, power point presentations and so on. Teaching aids are available for all the subjects in the VTU syllabus. Internet academic useful materials are routinely downloaded as & when needed by faculties since last two years.

Teachers develop Lab Manuals, PPTs based their on their Subjects handled by Individual teachers and the same is made use for the students.

Delivery of the syllabus contents is carried out by the faculty in the following ways:

- By preparing notes
- Through PPT presentations.
- By providing Lab Manuals

The students are provided with Models of Engineering Drawing – 1 Planes & Solids, Models of IC Engine, Workshop models, Models of Agricultural Equipment. Machine tool Models (Radial Drilling Machine), Models of Boilers etc. for better understanding and learning.

c) Percentage of faculty

Bio Technology

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of Staff (10)	%	No. of Staff (10)	%	No. of Staff (10)	%	No. of Staff (10)	%
Resource Persons	2	20	3	30	1	10	1	10
Participated external workshops	5	50	5	50	9	90	8	80
Presented Papers	7	70	1	10	1	10	1	10

Biomedical

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of staff (7)	%	No. of staff (6)	%	No. of staff (6)	%	No. of staff (6)	%
Resource persons	Nil	---	5	83	Nil	---	Nil	---
Participated in external workshops	07	100	06	100	06	100	04	66
Presented Papers	05	71.4	06	100	01	16.6	01	16.6

Chemical

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of staff (6)	%	No. of staff (6)	%	No. of staff (6)	%	No. of staff (6)	%
Resource persons	06	100	05	83	05	83	05	83
Participated in external workshops	05	83	05	83	04	67	05	83
Presented papers	02	33	02	33	02	33	03	50

Civil

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of Staff (14)	%	No. of Staff (14)	%	No. of Staff (14)	%	No. of Staff (14)	%
Resource Persons	Nil	--	Nil	--	Nil	--	Nil	--
Participated in external workshops	03	21	02	14	02	14	02	14
Presented papers	03	21	03	14	02	14	02	14

CS&E

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of Staff(30)	%	No. of Staff(30)	%	No. of Staff (30)	%	No, of Staff (30)	%
Resource persons	Nil	--	Nil	--	Nil	--	Nil	--
Participated in external workshops	12	40	18	60	15	50	16	54
Presented papers	4	14	2	6	3	10	3	10

E&C

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of Staff (28)	%	No. of Staff (26)	%	No. of Staff (26)	%	No. of Staff (25)	%
Resource Persons	03	11	Nil	--	Nil	--	Nil	--
Participated in external workshops	06	21	13	50	09	34	16	64
Presented papers	01	04	01	04	01	04	03	12

E&E

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of Staff (14)	%	No. of Staff (14)	%	No. of Staff (14)	%	No. of Staff (14)	%
Resource Persons	Nil	--	Nil	--	Nil	--	Nil	--
Participated in external workshops	05	36	05	36	05	36	05	36
Presented papers	01	07	01	07	01	07	--	--

E&I

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of Staff (6)	%	No. of Staff (6)	%	No. of Staff (6)	%	No. of Staff (6)	%
Resource Persons	Nil	--	Nil	--	Nil	---	Nil	--
Participated in external workshops	04	67	05	83	06	100	05	83
Presented papers	01	17	02	33	Nil	--	01	17

IS&E

People	2015-16		2014-15		2013-2014		2012-2013	
	No. of staff (22)	%	No. of staff (25)	%	No. of staff (23)	%	No. of staff (20)	%
Resource Persons	Nil	--	Nil	--	Nil	--	Nil	--
Participated in external workshops	02	09	02	08	03	13	01	05
Presented papers	03	13	02	08	03	13	0	0

Textile Technology

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of Staff (08)	%	No. of Staff (07)	%	No. of Staff (07)	%	No. of Staff (08)	%
Resource Persons	02	25	02	28	02	28	03	38
Participated in external workshops	06	75	03	43	03	43	03	38
Presented papers	02	25	03	43	02	28	03	38

Mechanical

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of Staff (37)	%	No. of Staff (39)	%	No. of Staff (35)	%	No. of Staff (37)	%
Resource Persons	Nil	--	Nil	--	Nil	---	Nil	--
Participated in external workshops	14	38	16	41	08	23	11	30
Presented papers	12	32	11	28	09	26	12	32

MCA

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of staff (12)	%	No. of staff (12)	%	No. of staff (12)	%	No. of staff (12)	%
Resource Persons	Nil	--	Nil	--	Nil	--	Nil	--
Participated in external workshop	01	08	01	08	01	08	Nil	Nil
Presented Papers	02	17	02	17	03	25	01	08

Chemistry

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of Staff (07)	%	No. of Staff (07)	%	No. of Staff (08)	%	No. of Staff (06)	%
Resource Persons	02	29	01	14	Nil	--	Nil	--
Participated in external workshops	Nil	--	01	14	02	28	02	29
Presented papers	02	29	02	29	02	28	02	29

Physics

People	2015-2016		2014-2015		2013-2014		2012-2013	
	No. of Staff (06)	%	No. of Staff (06)	%	No. of Staff (06)	%	No. of Staff (06)	%
Resource Persons	Nil	--	Nil	--	Nil	--	Nil	--
Participated in external workshops	Nil	--	02	33	01	16	01	16
Presented papers	02	33	01	16	01	16	02	33

2.4.4 What policies/systems are in place to recharge teachers? (eg: providing research grants, study leave, support for research and academic publications teaching experience in other national institutions and specialized programmes industrial engagement etc.)

Institute encourages teachers to submit R&D proposals to funding agencies.

Institute also provides matching grants in terms of free power, lab space, telephone, internet, computer, printer, seed money etc.

Institute encourages faculty by giving travel grants, financial assistance for publication of research papers in peer reviewed journals to carryout R&D work.

In order to improve the quality of teachers, FDPs, seminars, workshops and orientation programmes are organized in the college for the benefit of teachers. They are also encouraged to participate in such programs outside the institute.

Financial assistance is given for presenting papers at the national and international conferences.

Faculties are motivated to acquire their Ph.D. by deputing them officially providing financial assistance and study leave for the entire period of study.

In addition faculty are provided with consultancy sharing benefits, awards for best and innovative projects.

2.4.5 Give the number of faculty who received awards / recognition at the state, national and international level for excellence in teaching during the last four years. Enunciate how the institutional culture and environment contributed to such performance/achievement of the faculty.

The institute recognizes the talented and best teachers in each branch of engineering. The best performing teacher is identified and honored with 'Best Teacher Award' in excellence in academics. The award carries citation, memento and cash. This initiative is taken by the management to encourage the faculty who excel in their field of engineering.

Details of Faculty who received awards/recognition during the last 4 years:

Dept.	Year	Name of Faculty	Name of award/recognition
Chemical Engg.	2014-15	Dr.G.P.Desai	Project of the year (during seminar and exhibition of KSCST)
	2013-14	Dr.B.M.Kulkarni	Project of the year (during seminar and exhibition of KSCST)
	2011-2012	1.Dr.Kalleshappa C M 2.Dr.B.M.Kulkarni	CISE award
Biotechnology	2013-14	1.Vanitha K.P 2.Dr. Manjunath N.S	2nd Place in Research Paper Presentation Best Project of the year.
	2011-12	1. Prakash K K 2.Prakash K K	1. P.H Gregory Award. 2. 1st Place and Cash Prize.
Civil Engineering	2010-2011	1.Dr. H B Aravinda	Scientist of the year – 2011 by National Environmental Science Academy, New Delhi – 110 019
		2.Dr. Suresh B	Sunderlal Bahuguna Young Scientist award by BOSE Science Society, Arimalam, India

Dept.	Year	Name of Faculty	Name of award/recognition
Mechanical Engg.	2011-2016	Dr.S.Subrahmanya Swamy	Worked as a consultant for industries around Bangalore on development of machines
Computer Science and Engineering	2013-2014	1. Dr. Nirmala C R 2. Ashoka K	Best Mentor Award by IBM India, Ltd. INSPIRE faculty Award by Infosys Campus Connect
	2012-2013	1. Dr. Nirmala C R	Best Mentor Award By IBM India, Ltd.
	2011-2012	1. Dr. Nirmala C R 2. Prof. Roopa G M	Drona Award by IBM India Ltd. Outstanding Trainer Award by Infosys Campus Connect Team
	2010-2011	1.Dr. Nirmala C R	1. Drona Award by IBM India Ltd. 2. Champion Trainer by Wipro Mission 10X Team 3. Outstanding Trainer by Infosys Campus Connect Team
IS&E	2011-2012	1.Sheik Imran (advisor) 2. Patil N.S. (advisor)	'Project of the year' during Seminar & exhibition of KSCST
Textile Technology	2011-12	1.Dr.K.Murugesh Babu	**Research Fellowship,** Institute of Textiles and clothing, Hong Kong Polytechnic University, Hong Kong
	2011-12	1. Dr.K.Murugesh Babu	BEA Best Teacher Award
	2014-15	1. Dr.K.Murugesh Babu	**"Commonwealth Fellowship",** Association of Commonwealth Universities, UK

2.4.6 Has the institution introduced evaluation of teachers by the students and external Peers? If yes, how is the evaluation used for improving the quality of the teaching-learning process?

There is a system for evaluation of teachers by the students and by external peers. A feedback format is prepared and given to the students to give their fair and frank opinion about the subject taught. At the end of semester these formats are collected and the data is compiled to know the performance of the teacher. The data is analyzed and constructive suggestions are given to teachers on their methodology of teaching, style of teaching, use of innovative methods for teaching, development of laboratories, projects, paper publications, R&D activity. The format of the feedback is available in **Annexure J.**
The University result analysis is carried by Academic Audit Council every semester and suitable actions are initiated to improve the results.

2.5 Evaluation Process and Reforms

2.5.1 How does the institution ensure that the stakeholders of the institution especially students and faculty are aware of the evaluation processes?

All the rules and regulations governing undergraduate/post graduate courses are mentioned in the corresponding 'Scheme and Syllabus' book supplied by VTU. The booklet contains information on attendance requirement, internal assessment marks, eligibility for passing, maximum duration for course completion, promotion and eligibility to appear for examinations, electives, seminar & project, award of class at semester level, award of class at degree level, award of medals & ranks and transfer from on college to another college.

The Academic Committee headed by the Dean (Academic) in consultation with Principal prepares the academic calendar at the beginning of every semester. This calendar contains the date of commencement of classes, test schedules, date of semester closing, practical/theory exam commencement dates etc. The evaluation of internal assessment test is done as follows: Three internal assessment tests are conducted in a semester and the average of two best test marks are calculated and displayed on the notice board. Students are asked to go through their test books and if any discrepancies are found, they can meet the respective teachers for clarification. After every test, the students' progress report containing the consolidated attendance and marks is dispatched to their parents on the scheduled date.

In this way the entire process of evaluation is made transparent to students, teachers and the parents.

The University results are announced on the website; students and parents can see the results on the web.

Faculties are also evaluated for their performance through feedback from students. Faculty will be informed about their level of performance.

2.5.2 What are the major evaluation reforms of the university that the institution has adopted and what are the reforms initiated by the institution on its own?

The major evaluation reforms introduced by the university in the recent years are the following.

On-line resume entry:
First year students are required to enter their details to the VTU database.

On-line entry of internal assessment marks:
The final IA marks of the students are to be entered to VTU website during the period notified by the university. The concerned subject teacher has to enter the IA marks and the same is to be approved by the Principal. Once the Principal's approval is over, no alterations can be made to these marks under any circumstances.

On-line uploading of examination/revaluation application forms:
Examination/revaluation applications are to be uploaded to VTU website during the period notified by the university. A printout of the receipt is kept in the department for future reference.

Question Paper Delivery System:
All VTU examination question papers are delivered through a highly secured data transfer system. Separate security codes are supplied to Chief Superintendent, external deputy chief superintendent and system operator by the University for downloading the question paper. The question paper can be downloaded only 30 minutes before the commencement of examination. Further, necessary copies of the same are made and packed. As per VTU guidelines, the entire process strictly takes place in a strong room exclusively meant for the purpose. Entry to the strong room is restricted to examination staff only.

Digital evaluation of answer scripts:
On completion of an examination, the answer scripts are immediately sent to the main VTU evaluation centre. These answer books are scanned to digital form and communicated to various branches to be evaluated by teachers. As the entire process is automated, the effort of the evaluator is reduced to a great extent. This system also avoids the difficulty in transporting the answer scripts to various evaluation centers and back.

Publication of results in website/communication through SMS:
Students can get the result from website or by sending SMS to the university. The major reforms introduced by the institution are the following:

The institution has a separate exam section with 10 systems of latest configuration having high speed internet access.

Teachers use this section for on-line entry of IA marks and on-line uploading of examination application forms to VTU.

This section is utilized for entry of IA marks and attendance immediately after internal assessment tests.

2.5.3 How does the institution ensure effective implementation of the evaluation reforms of the university and those initiated by the institution on its own?

The institute effectively implements the evaluation reforms of the university and that of the institute to ensure total transparency in the evaluation methodology. The academic committee of the institute monitors the uploading of IA marks and online entry of examination of every student. Since wrong entries are punishable by the university, the academic committee takes utmost care while uploading these details on the VTU website. As far QPDS (Question Paper Downloading System) is concerned, it is the combined responsibility of the Chief and External Deputy Chief Superintendents and are responsible for maintaining confidentiality. In addition, the Flying Squad members frequently visit the institute during examinations and inspect the evaluation system. Tests are conducted on scheduled dates with utmost care to avoid malpractices.

2.5.4 Provide details on the formative and summative assessment approaches adapted to measure student achievement. Cite a few examples which have positively impacted the system.

Faculty members in the institute follow the formative and summative approaches to evaluate students' performance and achievements through assignments, presentations, group discussions, quizzes, problem solving, class interaction, workshops, seminars, project viva voce, written and practical examination, attendance in the class room, extracurricular and co-curricular activities. These practices have improved the performance levels of the students to the maximum extent.

As far as examination preparation is concerned, the faculties take extra care in solving the previous year's question papers, model question papers so as to prepare the students for main examinations. The continuous evaluation systems through periodical internal assessment tests have helped the students to excel better in the university examinations.

There are remedial/add-on/bridge/enrichment courses designed for higher semester students also. The teacher-in-charge/class teacher can recommend a

suitable course for each student in case it is necessary. The continuous evaluation process goes on till the final semester.

2.5.5 Detail on the significant improvements made in ensuring rigor and transparency in the internal assessment during the last four years and weightages assigned for the overall development of students (weightage for behavioral aspects, independent learning, communication skills etc.

The institution is affiliated to VTU and hence governed by its rules. As per norms, three internal assessment tests are conducted in a semester, the third being an improvement test. Questions for the IA tests are generally chosen form old VTU question papers. Evaluation is strictly as per the scheme prepared by the teacher who has set the question paper. Internal test question paper is set for 25 marks and the time allotted is 1 hour. VTU examination pattern is followed in conducting IA tests. The evaluated blue books are shown to students for clarifications. Also the IA marks are displayed on notice board.

The behavior of the student is also monitored along with his experimental skills in the laboratory and his zeal to perform additional experiments and translate innovative ideas to design a new experiment. Regularity of the student to the institution is monitored by recording his attendance in every class by the teacher.

Apart from the academics, the students interests with regard to co-curricular and extra-curricular activities are identified and the institute encourages the students to participate in these activities. Students are also encouraged to participate in technical symposia, paper presentation and visits to industries etc. to get latest information in their domain-subject.

Students are also provided an opportunity think, learn and act independently in domain-subjects. Any new idea from the student is always encouraged, recognized and rewarded suitably.

Classes on communication skills, technical skills, presentation ideas, leadership abilities are the regular programs conducted by the institute every year to nurture the significant growth and overall development of students both in academics, extra and co-curricular and behavioral activities.

2.5.6 What are the graduates attributes specified by the college/ affiliating university? How does the college ensure the attainment of these by the students?

NBA has identified the following eleven Graduate Attributes for engineering programs which are refereed as program outcomes specific to each program. The following are the attributes:

Engineering knowledge and skill development
Problem solving
Design and development
Investigation of complex problems
Use of modern tools
Engineer and society
Environment and sustainability

Ethics
individual and team work
Communication skills
Lifelong learning
Project management & Finance

Institution has adapted programme objectives, outcomes, course objectives which are in line with the university. The university objectives and outcomes are implemented by all the faculty of the institute keeping in view the vision and mission of the institute also.

The administration, principal and the faculty members have evolved a scientific approach to inculcate in the students the above attributes through interactive learning approach. Regular conduct of classes, continuous assessment of students through tests and assignments ensure attainment of these goals. The institute takes additional steps to organize special programs to develop communication skills, leadership abilities and technical skills among the students. Invited talks by the experts from the industry, in-plant training in industries, motivation of students to participate and present papers in technical symposiums and workshops enable them to acquire the attributes for the overall progress. Students are also motivated to participate in community based activities like blood donation, NSS, VTU Youth festival and Red Cross.

2.5.7 What are the mechanisms for redressal of grievances with reference to evaluation both at the college and University level?

University has its own system for redressal of grievances. With reference to evaluation, if the student has scored less mark than expected, he/she can apply on-line for revaluation of his/her answer script after paying the prescribed fee. If the revaluation results are not satisfactory, the student can apply for challenge revaluation. Also the student can apply for a photocopy of his/her answer script. The photocopy is mailed to the id provided by the student. At institution level, grievances related to evaluation are normally redressed by a separate Grievance Redressal Committee headed by the Principal and senior professors, concerned teacher/head of the department depending on the intensity of the problem.

2.6. Student performance and Learning Outcomes

2.6.1 Does the college have clearly stated learning outcomes? If 'yes' give details on how the students and staff are made aware of these?

The course outcomes are printed in the syllabus book supplied by the university. Hence the students and faculty members are aware of the course outcomes of each course they handle for a particular class. The institution has a clear mandate on how these outcomes are met for a particular course. The learning outcomes are defined in terms of program education objectives, program outcomes, course outcomes. Necessary steps are taken by each department to meet the required course outcomes through interactive teaching and learning processes adapted in the department. The learning outcome for each course is clearly indicated in the course curriculum provided to all the students. The learning outcomes are notified in the academic documents given to students and faculty.

2.6.2 Enumerate on how the institution monitors and communicates the progress and performance of students through the duration of the course/programme? Provide an analysis of the students' results/achievements (Programme/course wise for last four years) and explain the differences if any and patterns of achievement across the programmes/courses offered.

To monitor the students' progress, institute has the continuous internal evaluation system which consists of Internal Assessment Tests conducted in each course. Three such tests are conducted in a semester to assess the performance of students. Improvement Tests are also conducted if necessary based on the performance of students. Continuous Assessment Report (marks obtained in every test) is displayed on notice board of the respective department after every test. Institute communicates the grades, marks obtained in the internal tests to the parents and students regularly. It organizes regular parents / guardians meet to have a communication with students and parents. In a semester three progress reports are sent to the parents, after the first IA tests, after the second IA tests and at the end of the semester respectively. The report card contains IA marks & Attendance in various subjects along with class teacher's remarks. The third report card has the final IA marks & attendance with Principal's remarks on eligibility to appear for the forthcoming examinations. The university also conducts the written/theory/practical examination at the end of semester. The result of same are communicated to the student and parents. The academic committee analyses the university examination results for each Program. Results of all the branches for the last 4 years are provided in **Annexure A-1.**

2.6.3 How are the teaching, learning and assessment strategies of the institution structured to facilitate the achievement of the intended learning outcomes?

The curriculum is prescribed by the university and the teaching-learning program adopted by the institution always aim at the academic excellence. Institute aims to help the students to utilize their learning potential through the provision of a supportive, vibrant and challenging learning environment and the teaching, learning and assessment strategies are defined accordingly. To achieve this goal, the institution has formed several academic committees such as IQAC, Research Advisory Committee to impart quality education and make the students to be useful to the society. Classroom sessions, lab sessions, mini-project, main project, seminar, interaction with R&D faculty, on-line quiz programmes, communication skill classes, participation in co-curricular activities etc. make our students attain graduate attributes to a great extent. Classroom sessions, guest lectures and E-resources make the students knowledgeable and aware of the latest developments. Memberships in professional societies provide our students a good platform for exposure to an environment where innovative ideas are exchanged. This improves the chances for their employability and entrepreneurial talents. As project work is a part of the curriculum, students are forced to explore innovative ideas.

Students are active partners with shared responsibilities in teaching – learning process and hence ICT based innovative teaching methods and student centric methods are adopted to enhance participation of students in teaching-learning process. Each and every strategy of the Institute is well planned to convert the budding engineers into responsible citizens with the knowledge, skills, attitudes

and values. It helps to enhance their employability and progression opportunities.

2.6.4 What are the measures/initiatives taken up by the institution to enhance the social and economic relevance (student placements, entrepreneurship, innovation and research aptitude developed among students etc.) of the courses offered?

Institute's Training and Placement Cell conducts a number of training programs to enhance the employability of the students. It conducts aptitude tests and mock interviews to boost the self confidence level of the students.

Research Advisory Committee of the institute has the objective to develop research environment in the institute and motivate faculty and students to get actively involved in research projects. It also helps the faculty to apply for research projects funded by professional bodies like AICTE, DBT, DRDO, UGC, DST, VGST, VTU and CSIR etc.

The institute has a Product Development Cell and Industry-Institution Partnership Cell wherein students' innovative ideas are encouraged and the ideas are taken forward to develop prototype models for the industry.

KSCST, Bangalore identifies the "best student projects" and are awarded with cash prizes and certificates every year.

The institute organizes blood donation camps and NSS camps every year to nurture the talents among the students and to improve their interpersonal and behavioral skills.

Details of the programs organized are available in **Annexure H-1.**

2.6.5 How does the institution collect and analyze data on student performance and learning outcomes and use it for planning and overcoming barriers of learning?

The institution collects the data with regard to the performance of the students in internal assessment tests and semester examinations. The performance analysis is done after every test and after every semester examination. For this purpose a separate evaluation committee is formed and the committee analyses the results. Using the remarks by the committee, the HODs will take necessary steps to improve upon the teaching-learning process to overcome any barriers if any in terms of learning. Slow learners are advised to undergo remedial classes whereas fast learners are guided in innovation-oriented activities. Institution also invites suggestions from Alumni and industry experts so as to improve the teaching and learning objectives. Feedbacks are also collected from employers, alumni, parents.

2.6.6 How does the institution monitor and ensure the achievement of learning outcomes?

The learning outcomes (program outcomes) spell about the capabilities of graduating student in terms of knowledge, skill and attitude.

The knowledge related POs are attained by the students through the courses of four years of graduation study and are assessed through direct assessment tools viz. examinations, assignments, tutorials quiz, etc. as well as indirect assessment tools like Course Exit Survey and Graduate Exit Survey.

The skill related POs like team spirit, communication skills (both oral and written, use of modern tools etc.) are attained by the students through direct assessment tools like laboratory sessions, laboratory examinations, mini-projects, projects, seminars, presentations & co-curricular and extra-curricular activities. Since attainment of skills cannot be quantified directly, rubrics are developed with appropriate performance criteria by the institute to assess the students when they work in laboratories, give presentations on their projects, submit written reports on any academic activity and participate in co-curricular and extra-curricular activities. These are also assessed through alumni feedback.

The attitude related POs are assessed through participation of the student in societal work carried out by the student, observation on his/her overall behavior and response and independently executed tasks. These are also assessed through alumni feedback.

Meetings are conducted on a regular basis involving Management, Principal, Dean Academic, heads of department, and Dean Placement to formulate strategies for achievement of learning outcomes by the students. The capability level of a student is generally assessed based on the following parameters:

Evaluation of internal and university examinations results, assignments in terms of marks scored by him/her in internal as well external examinations, quizzes, problem solving exercises, seminars by students, attendance of students in the class room, skill gained in carrying out the experiments.

Performance in aptitude tests, mock interviews and group discussions. The assessment outcomes are used to give additional training to students who are lagging behind. The institution is trying its best to see that the students attain all graduate attributes. The results are visible through the alumni occupying top positions in industry and society.

2.6.7 Does the institution and individual teachers use assessment/evaluation outcomes as an indicator for evaluating student performance, achievement of learning objectives and planning? If 'yes' provide details on the process and cite a few examples.

Individual teachers use assessment/evaluation as an indicator for evaluating student performance. Different evaluation methods are used as per the need of the course.

The teacher uses following factors to check fulfillment of objectives:

Marks in tutorials, attendance percentage. Test marks are calculated based on these assessments.

Students participate in different academic activities viz. tutorial, mini projects, solution of numerical problems, quiz, seminar, oral etc. These activities help to assess proficiency of students in application of mathematical and engineering concepts, effective communication skills. This process helps in achievement of learning outcomes.

Teacher monitors the laboratory skills developed by students during practical sessions.

Any other relevant information regarding Teaching-Learning and Evaluation which the college would like to include.

Every year Karnataka State Council for Science and Technology (KSCST) will extend financial support to the innovative student's projects.
These sponsored projects are converted to staff project and proposals of these projects will be sent for funding agencies.
Few of such projects are commercialized. These are:

Bapuji Hank dyeing machine.
Silk reeling machine.
Fabrofeel instrument.
Design and Fabrication of Dye Sensitized solar cell.
Thermal cutting of glass plate using hot air.
Development of internal grinding machine with granite epoxy base and high frequency spindle.

CRITERION -III

RESEARCH, CONSULTANCY AND EXTENSION

CRITERION III
RESEARCH, CONSULTANCY AND EXTENSION

3.1 Promotion of Research

The reconceptualization of Educational institutes as centers of excellence has redefined their engagements towards higher education to meet new challenges. Therefore, research is pre-requisite for any institute's growth and quality sustenance. At the individual level, research commitments usher new dimensions to self-actualization, professional wisdom and intellectual well-being, leading to quality shift in teaching and learning and enhancing the long term strength of the engineering institutions. Research being one of the core cardinals, Bapuji Institute of Engineering & Technology has taken many important steps to promote research through diversified initiatives.

Besides pervading research zeal among undergraduate, post graduate engineering students, scholars and teachers through workshops, orientation and training, enhancing research infrastructure, BIET's focus is to establish Central Instrumentation Center, augment laboratory and library facilities, research journals, provide unlimited access to internet. Strong advisory and monitoring steps by the RAC (Research Advisory Committee) have directed research activities to its creative execution and implementation of research findings in the relevant areas.

3.1.1 Does the institute have recognized research centers of the affiliating University or any other agency/organization? If yes give details on the research centers and the facilities available.

Bapuji Institute of Engineering &Technology (BIET) has established research centres to carry out the research and innovation among the academia in the field of Science &Engineering. BIET puts great emphasis on research sustaining innovation and promote research culture among faculty and students in the institute. As a result of this, the following academic dimesions are added to this institute:

Thirteen departments have been recognized as Research Centers by Visvesvaraya Technological University, Belagavi, Karnataka viz., 1) Department of Biomedical Engineering 2) Biotechnology 3) Chemical Engineering 4) Civil Engineering 5) Computer Science and Engineering 6) Mechanical Engineering 7) Textile Technology 8) Industrial Production 9) Electrical and Electronics 10) Chemistry 11) Mathematics 12) Environmental Study Centre, 13) Master of Business Administration.

Many faculty members are carrying out their research in core and applied research areas in these centers and full-time/part-time Ph.D./ M.Sc.Engg. (by Research) scholars are also carrying out research in these centers.

The Departments identified as Research Centres are well equipped with state-of-the art facility to carry out research activities and are very well associated with industries/research organizations. The institution has signed memorandum of understanding (MoUs) with more than 20 organization for research and product development.

All departments are provided with internet connectivity for accessing research papers published in reputed journals and international conferences across the world. The Institute has subscribed for several E-resources like IEEE explorer, Springer, K-Nimbus, ASCE library, Tylor & Francis journals, Proquest Database and Science Direct. In addition, the institute has subscribed for more than 142 print journals.

The Institute also receives custom duty exemption from Department of Scientific and Industrial Research (DSIR), Government of India through VTU (as affiliated Institute). The Bapuji Educational Association® is also registered with IEC certificate for import/exports.

The Institute has been recognized with 2(f) status by the University Grants Commission and seeking recognition under 12(B) after affiliating university VTU obtains the status.

In addition, few departments of the institute are provided with BSNL broad band internet connectity. The departments are also equipped with some of the common and major licensed software/tools for research work. Details are given below:

Departments	**Details of software**
Bio Medical Engineering	Matlab Software (R 2011b 7.13), National Instruments Lab View Software (Version 7.1), MIMICS Software, RMS EP Mark II 2CH PC Based Kit, RMS Vesta 121i (PCECG), RMS EEG Brainview EC 24Ch PC Based Kit
Computer Science & Engineering	Licensed version of IBM Bluemix cloud platform. Department has also subscribed R-Studio and other tools like WEKA and Rapid Miner Server version software.
Chemical Engineering	CHEMCAD software
Mechanical Engineering	AUTOCAD-INVENTOR, SOLIDWORKS, NISA Analysis Software. ANSYS-11, CATIA V5 R10, NISA-3, Solid Edge, Swan soft CNC simulator Ver. 6.3., Swan soft CNC simulator Ver. 6.3., CADEM Cam Lab Version 10 with Encyclopedia
Civil Engineering	G.T. Strudl Version 2.6 and Staad Pro 2013

Infosys has identified the institute as Centre for Campus Connect Programme

The present focus of the institute is to improve the laboratory infrastructure by bringing new industry relevant technology to enable higher level of learning in students, foster integrated learning by providing multiple industry relevant interfaces, enable students to take up industry relevant projects and encourage faculty to take up research by providing ability to add customer logic. IBM has supported the activity with establishing Software Centre of Excellence. However, efforts are on the way to get state government assisted New Age Incubation Centre.

3.1.2 Does the Institution have a research committee to monitor and address the issues of research? If so, what is its composition, mention a few recommendations which have been implemented and its impact.

A. The Institute has a Research Advisory Committee (RAC) to monitor and address the issues of research. The following is the list of members:

1. Prof. Y. Vrushabhendrappa	: Director
2. Dr. S.Subrhamanya Swamy	: Principal
3. Dr. B.E. Rangaswamy	: Dean R &D and Member Convener
4. Dr. K.S.Basavarajappa	: Member
5. Dr. K.Murugesh Babu	: Member
6. Dr. B.Poornima	: Member
7. Dr. G.P. Desai	: Member
8. Dr. S. Kumarappa	: Member
9. Dr. K.Sadashivappa	: Member

Following are the RAC advises/recommendations:

Training Programme for students and staff

Regular workshop related to Research methodology and how to write proposals for getting financial assistance through funding agencies.

Recommends to organize National and International conferences in emerging areas.

Advises faculty members to submit research proposals to various funding agencies.

Institution grants for best student projects in the departments from the year 2014-15 onwards. For department with intake of 120, two Projects will be sponsored through institute: with intake 60 and less, one student project will be sponsored.

Committee recommends to allocate funds for Research centers for publications, proposal writing etc.

Recommends to depute the faculty to participate in conferences.

Principal investigators of the project are advised to submit request to RAC for any recommendation required and insists them to update accounts and submission of Utilisation certificate to relevant funding agencies.

In-house scrutiny of the research proposals are done by the RAC.

As a result of intensive and corresponding efforts of RAC minor research projects were submitted to VGST, KSCST (including biofuel board), and as many as 83 projects were sanctioned between 2012-2016.

Probable domains in the emerging areas of technological research were mapped and proposals are being shaped with the assistance from RAC. This in turn is increasing the number of projects submitted to different agencies for funding.

RAC is also entrusted with the task of identifying and recommending the projects which are suitable for internal funding from the institute from 2014-15 onwards.

The details of internally funded projects for the year 2014-15 and 2015-16 are provided in the **Annexure B-2.**

B. In addition to the RAC BIET has also constituted the Departmental and Institute Doctoral committee. Following is the list of Institute Doctoral committee:

1. Dr. S.Subrahmanya Swamy - Chairman / Head of the Institution, Principal
2. Dr.B.E.Rangaswamy - Member Convener. Dean, Research & Development
3. Dr. K.S. Basavarajappa - Member
4. Dr. H.B.Arvinda - Member
5. Dr.K.Sadashivappa - Member
6. Dr.G.S.Sunitha - Member
7. Dr.B.Poornima - Member
8. Dr.K.Murugesh Babu - Member

The committee periodically reviews the work of Ph.D. research scholars.
Each Research scholar will have to submit his/her progress on a half yearly basis to a Departmental Research Advisory Committee/Doctoral committee consisting of Research Supervisor/s, a senior Professor and Head of the department.
The progress report has to be submitted to the university after getting the signature of the Member convener of the Doctoral Committee. The report will be sent to the university through the Head of the Institution.
The Committe coordinates with different research centers of the institute and create a centralized database of the research activities and research scholars, pertaining to various research centers of the Institute.
Committee monitors the progress of research scholars in association with the guides concerned.
The Committee will monitor and assist in purchase of equipment sanctioned to the research projects under different funding schemes.

3.1.3 What are the measures taken by the Institution to facilitate smooth progress and implementation of research schemes/projects?

Autonomy to the principal investigator
The institute has given full freedom to principal investigator in carrying out his/her research work so that the project is implemented suitably.
Timely availability or release of resources
Resources such as financial, consumables, library and computational facilities are made available as and when required by the project/principal investigator.
Adequate infrastructure and human resources
All departments have well established research laboratories with necessary back up of software and hardware. Furthermore, if any extra infrastructural facility, needed, the same will be made available. Experts from reputed institutions like IISc, SSIMS and RC, JNCASR, ISRO, IBM, TCS, KSPCB, CPCB, NEERI etc., were consulted and have contributed for the progress of the projects under progress.
Time-off, reduced teaching load, special leave etc. to teachers
As per the norms of AICTE, workload will be allotted to teachers. For the faculties involving in projects, workload will be reduced. Teachers are allowed to take permission leave for one month each during December to January and June to July every year. This will help them to prepare the

research proposals and plan for student's project.Teachers are also permitted to avail special leave to attend to their research related work, such as, visit to reputed R&D centers, IITs and IISc etc. In addition, faculty members are provided leave to prepare and attend to their research course work.

Support in terms of technology and information needs

25 Mbps internet facility, Wi-Fi internet facility at Administration block is available in the campus so that researchers can utilize this facility. The library has good collection of reputed Research Journals, E-Journals, E-books, Hand books and latest technical reports for the benefit of researchers. All departments have well established laboratories which can be used round the clock for research activities.

Facilitate timely auditing and submission of utilization certificate to funding authorities

Research Advisory Committee/Dean R&D regularly monitors the progress of ongoing research work and guarantees that the utilization certificate is submitted well in time. The accounts section helps the researchers in timely preparation of the Statement of Expenditure, Utilization certificate, auditing and submission to the funding agencies. The college provides financial support to faculty to present their research publications in national and international conferences/journals.

Other informations

In consideration of the research activities carried out, the institution gets custom duty exemption certificate from affiliated university Visvesvaraya Technological University, Belgaum which is in turn recognized by Department of Scientific and Industrial Research (DSIR) and Scientific and Industrial Research Organization (SIRO).

The Institute also supports projects by providing additional funds to R & D projects to faculty members on the basis of Recommendation from Research Centre head/ Research Board.

The faculty members are given the freedom to carry out their projects independently along with their team, so as to devote time for research. The team comprises UG students with respective Supervisor/s, and PG students with respective Supervisor/s research scholars.

Permission to attend conferences, symposiums/workshops and bilateral visits are always encouraged and registration fee and travel grants are also sanctioned. Following faculty members were provided International travel support:

Sl. No.	Name of the faculty	Period	Institutional support (Rs.)	Details
1	Dr .B.E. Rangaswamy	06-07-2011 to 13-07- 2011	35,000/-	To attend 10th Basic course in Aerobiology held at Roskilda University Holbaek, Denmark.
2	Dr. K.Murgesh Babu	2011	28,500/-	Financial assistance for paper presentation abroad (Australia).
3	Dr . B.E.Rangaswamy	03-09-2012 to 07-09- 2012	12,800/-	To attend 5th European Symposium on Aerobiology held at Krakow Poland.

Sl. No.	Name of the faculty	Period	Institutional support (Rs.)	Details
4	Dr . B.E.Rangaswamy	22-09-2014 to 26-09-2014	63,500/-	To present research paper in 10th International Conference on Aerobiology held at University of Western Sydney, Australia.
5	Dr. K. Murgesh Babu	12-11-2015 to 18 -11-2015	20,000/-	To participate in international exhibition in Milan, Italy.

The purchases are taken care of by the Purchase Committee/Department committee and the administration based on the specifications required by the concerned researchers/HOD.

The major research facilities are available in Anneuxure B-1.

The Institute has subscribed to major online journals like IEEE, etc**.**

The BIET has been accredited thrice by NBA.The fourth NBA accreditation is in progress. This will help the researchers to get grants from government and other funding agencies. Consultancy work has been taken up by Civil, Mechanical, Electrical and Textile departments, with revenue generation.

3.1.4 What are the efforts made by the institution in developing scientific temper and research culture and aptitude among students?

The institute promotes scientific temper and research culture among the students and faculty. Vision of Bapuji Institute of Engineering & Technology is to establish an environment that enables the development of thrust areas in research. Institute motivates students with internal funding to take up advanced projects so that they can plan their career in research. Details of projects funded by institute for the year 2014-15 and 2015-16 have been provided in the **Annexure B-2.** In house project exhibition and competitions are conducted every year to promote innovative ideas. Eight semester students of all the departments exhibit their projects on Project Exhibition day in the concerned departments. A team of judges visits the exhibition hall and best student projects will be awarded with certificate of Merit and Prize. The list of winners for 2014, 2015 and 2016 is given below:

Winners of Annual students' projects for the year 2014 to 2016 (Project Exhibitions were held on May 21st 2014, May 22nd 2015 and May 23rd, 2016)

Sl. No.	Title of the Project	Dept	Year	Names of the students	Project Guide
1	'Heart Sound Analyzer'	BM	2014-15	Hanumanthappa E. Kavyashree G.S. Nikita G. Kamat	Mr. Anjaneya L.H.
2	'Monomodal Medical Image Registration and Validation for better treatment'	BM	2015-16	P. Indumathi Pooja M. Yashwini J. Shetty	Prof. Ashalatha M.E. Ms. Deepa
3	'Evaluation of phytochemical, anti-microbial, anti-oxidant and anti-cancer activities of selected medicinal plants'	BT	2013-14	Roopa Mudibasanagoudar, Sharada Galve, and Ranjana B.M	Mr. Deepak Hiremath.

Sl. No.	Title of the Project	Dept	Year	Names of the students	Project Guide
4	Isolation of plastic degrading microbes from soil'.	BT	2014-15	Amulya Shastri, Alisha G.H., Bharath N. and Pavan K.	Dr. B.E.Rangaswamy
5	Extraction of Nano-cellulose from watermelon rind	BT	2015-16	Sreelakshmi.S. Chandukishore, Ramya.M.N and Lakshmi.M.B	Dr. Sreenivas Reddy Bathula, Prof. Shruthi
6	Design of condensers of various duties using CHEMCAD	Chemical	2013-14	Vishakh C V Sauravkumar Swasthikumari	Dr.Mamatha M Smt. Shivarajini R D
7	Analysis of some detergents cakes and its formulation	Chemical	2014-15	Keerthikarigoudar Meghana H P Raiwat S Santhosh M C M	Dr.C M Kalleshappa
8	Supercritical fluid extraction, characterization of Aeglemarmelosleaves	Chemical	2015-16	Meghana P Dadapeer M Sunil kumar B B Mehatab Khan Gurani	Dr.C M Kalleshappa Dr.B.M.Kulkarni
9	Wearable Gesture Interface	IS&E	2013-14	Nivedita N. M. Sonakshi Santhosh Hanchinal Supraj	Sheik Imran Manasa K. M.
10	Blood Bank Management System	IS&E	2014-15	Suprajith C P Ronada Susheel kumar Shashikumar S.S Ashwin K D	Dr.Poornima B Rajat Babu H M
11	Child safety system for smart school	IS&E	2015-16	Vinaybhushan Sahana R A Divyashree KG Nadeem Khan	Shadaksharaiah.C Puneeth B H
12	Wireless control of Circuit Breaker	E&E	2013-14	Kiran.S.O. Yatheesha.K.C. Banuprathap.B.V Soumya.M.	Basavarajappa S R
13	Fault Analysis and Electrical Protection of Distribution Transformers	E&E	2014-15	Kavya.B Lovely Kumari Anupam Kumar Jayamti	Dr. M.S. Nagaraj
14	Automated Grocery Dispenser	E&E	2015-16	Likhita L. Vali Sanjeev R.Mujumdar Sheeba Parveen.M Sonali Kumari	Karibasavaraju. T.S.
15	Design and fabrication of vertical wind turbine for power generator at highway medians (UG)	MECH &IP	2013-14	Anilprasad Asifulla A Satishkumar Suhas S	Dr. S Kumarappa
16	Non-conventional cutting of plate glass using hot air jet mixed with abrasives (UG)	MECH &IP	2013-14	Kallangouda T Tippangoudra Pavanprasad A Rajesh M Vinod Sajjan	Dr. A G Shankaramurthy

Sl. No.	Title of the Project	Dept	Year	Names of the students	Project Guide
17	Stability analysis of biodiesel, ethanol and diesel blends and performance testing of CI engine with these stable blends (PG)	MECH &IP	2013-14	Vicky Singh	Mr Rajesh S
18	Investigation on conversion of flower wastes into bioethanol and performance evaluation on single cylinder IC engine (PG)	MECH &IP	2013-14	Veerabhadrappa C Balikayi	Dr. S Kumarappa Dr. B M Kulkarni
19	Utilization of biodiesel byproducts and agro residues for the production of fuelpallets (UG)	MECH &IP	2014-15	Dhareppa M B Revanasiddesh B V Sachinkumar H S Sunil P	Mr Santhosh U
20	Design and fabrication of wind turbine for power generation on moving train (UG)	MECH &IP	2014-15	Dharshan K B Ganeshbabu H M Manjunatha D S Naveenkumar Y	Dr. S Kumarappa
21	Development of electronically controlled proportioning directional servo valves (UG)	MECH &IP	2014-15	Anurag Verma Md. MoinIqubal Ashutoshkumar Singh Abhay Singh Aman	Dr. Sharan A S
22	Design and fabrication of dye sensitized solar cells (UG)	MECH &IP	2015-16	Manjunath P K Channabasavaraj Manamohan P Y Chandrahas P	Dr. A G Shankarmurthy
23	Development of portable fire extinguisher using acoustic waves (UG)	MECH &IP	2015-16	Akanksh Sarji Mohanram R K Uttunga H R	Dr. Sharan A S
24	Rendring cotton and polyester / cotton blended fabrics Antimicrbial property using Tulsi leaf extract.	Textile	2013-14	Rekha N.K	K.B.Ravindra
25	Comparative studies on antimicrobial properties of sidarhombifolia (SRF), Bamboo and cotton fibres for medical application	Textile	2014-15	Appasaheb diddimani	S.M. Chandrashekar
26	Comparative study of fabrics produced from conventional and unconventional yarns.	Textiles	2015-16	Lavanya M.L	S.N. Ramesh
27	Mission Malnutrition – A step towards Healthier Infants	CS and E	2013-14	Manikanta K S Abhijeeth, Vinayak A Sanganagowda B	S B Mallikarjuna
28	Share and Care - An extended Approach to Blood Donation	CS and E	2014-15	Shilpa K, Sachin S Megha B, Pushpalataha K	Vinutha H P
29	Smart DL and RC	CS and E	2015-16	Akurath K N Santhosh R G Sharan C V Yash Chauhan T	R D Shivanand
30	Low cost arecanut sorting machine	E & CE	2014-15	B C Arpitha Neha N Patel Abhishek G M Ranjitha S	Dr. Suresh Chandra Mohan

Sl. No.	Title of the Project	Dept	Year	Names of the students	Project Guide
31	Voice assisted reverse gearing system	E & CE	2014-15	Nitin .B. Desai Siddangowda G.N Vinay N.D	Kiran Kumar G H
32	Virtual interactive premature baby monitoring system	E & CE	2014-15	Kumaraswamy R Sharanabasappa Dunagi Sunil P Vikas S	Mahendrachari
33	Palm based gesture controlled robot using image processing	E & CE	2014-15	Vanitha Chavan L Sunitha N R Vishal Kumar Nischay Mundas	Bhagya S
34	Face Guided Wheel Chair with Sewage Management	E & I	2013-14	Seema M R NandiniOnkar Keerthi Kumar V	Deepashri K M
35	Domestic Hybrid Power Generation	E & I	2014-15	Vyshak T R Chetan Kalledevar Pruthvi K J	Sreedevi L K
36	Aurdino Based Self Navigating Quadcopter	E & I	2015-16	AishwaryaLaxmi S M Pooja G V Sachin Ganesh	Sreedevi L K

In BIET students, along with teachers, come up with innovative ideas that leads to new projects and then on to products. The Institute has excellent product development cell which has developed many products, some of them are commercialized and details are given in **Annexure B-3.** Subsequently, steps are taken to apply and secure patents. List of patents applied is presented in **Annexure B-3.**

Several programmes are conducted time to time to promote scientific temperment among students.Many such programs are interdisciplinary and are attended by students of allied departments. Some of the programs are as follows:

Details of interdisciplinary programmes organized

Sl. No.	Academic Year	Particulars of the event (Seminar/Paper Presentations)	Date(s)	Total Number of Participants
Department of Biotechnology				
1	2013	Bio Technology in Human Welfare	Feb. 13th 2013	350
2	2013	Infosys Campus Connect Faculty Enablement Program on " Foundation Program 3.1"	28-01-2013 To 01-02-2013	50
3	2013	Research opportunities in Biotechnology and allied studies.	19th& 20th Oct. 2013.	250
4	2013	Information Communication Technology for Elderly Care"	6thDecember 2013.	80
5	2015	Recent Trends in Biological Sciences	Oct. 8th 2015	280
6	2015	Workshop on Research Methodology	28-10-2015	110
7	2014	Two days workshop on Big Data Analytics	22nd and 23rd August 2014	62
8	2015	"Modern Approach for Effective Management of Municipal Solid Waste	14th November 2015	120
9	2016	Entrepreneurship Awareness camp	August 2016	120

3.1.5 Give details of the faculty involvement in active research (Guiding student research, leading Research Projects, engaged in individual/collaborative research activity, etc.)

A total of 29 faculty members are recognized as research guides of Visvesvaraya Technological University, Belagavi, Kuvempu University, Shimoga and JNTU Hyderabad. They are also involved in guiding M.Tech, M Sc (Engg) by Research and Ph.D. scholars. A total of 91 students have registered for Ph.D. programme from Institute Research centres. Out of 91 students, 33 have completed the course work, 22 students have completed the comprehensive viva voce, 17 students are writing thesis and 15 students have submitted their final thesis. For the year 2016-17, seven students' registration is under progress. The details of the research students (Centre wise) and their status has been presented in **Annexure B-4.**

Most of the faculty members apply to funding agencies for research grants.

Research & Development cell and Product development cell motivate students to participate in the college innovative project competitions.

The project entitled "Design and Implementation of Bidirectional Power converter for Electric bike with Charging Feature" carried out by Ayesha Banu, Karthik K, Umesh, Shanthala B.C and Vinanthi Ittigi of 8th Semester E&C students of 2014 batch won "Baba Banda Singh Bahadur Engineering College Fatehgarh Sahib, Punjab National Award under best B.Tech project from Engineering Colleges Related to "Sustainable Development in Electrical Engineering & Electronics". The award was presented during 17th ISTE Students National Annual convention held at Rajkot Gujarat during 10-11th October 2014.

Every year students have been deputed from BIET-ISTE students' chapter with financial assistance to participate in conferences, symposiums, technical events etc. following are the some of the important events/programmes financed from BIET-ISTE students' chapter.

Twenty students from BIET participated in sixteenth ISTE students National annual convention held at Periyar Maniyamman University Tanjaore during 27th and 28th Sep 2013.

Ten students from ISTE-BIET Students chapter and four faculty members of ISTE-BIET chapter attended "17th ISTE students National Annual Convention-2014" held at VVP Eng. College, Rajkot, Gujarath during 10-11th October 2014. The theme of the convention was "Sustainable developments through innovative technologies". Mr Ashish S R, Akhil T V S and Aladalli Bakkesh won third & first prize respectively in different group events.

BIET-ISTE student chapter deputed Mr.Appasaheb Mallikasa Diddimani of 7th Semester Textile student to present Research paper on topic "Textiles in Defense applications" in the International conference on Technical Textiles and Nonwovens (ICTN-2014) held at IIT Delhi from Nov 6-8, 2014 and he was awarded IV Prize.

A total of 200 students from Institute and 2 teachers wrote ISTE chapter level Srinivasa Ramanujam Mathematical competition 2014 examination on 1stNovember 2014. Out of 200 students, 8 students and teachers were selected for Zonal level examination.

Sachin Kumar S of Industrial Production Department won first prize in zonal round of RoboTryst-2015 at BVBCET. He was deputed to participate in final rounds of National Level Championship during Tryst, The Annual Technical Festival held at IIT Delhi on 27th Feb to 2nd March 2015.

A team of 10 students and BIET-ISTE Students Chapter Faculty Adviser Dr. B.E.Rangaswamy participated in 18th ISTE National Annual Students Convention held at Kings College of Engineering, Thanjavur, Tamilnadu on 30-31st October 2015. During the occasion, students participated in oral presentation, poster presentation, quiz etc.

BIET organized one day "Workshop on Research Methodology" jointly with ISTE Students Chapter for PG students, Research students and Faculty on 28th October 2015.

Three students from VI semester Textiles Technology department Ms. Dhanalakshmi, Ms. Lavanya and Mr. Varunkumar were selected for paper presentation in 29th National Convention of textile engineers held at Bangalore on 26-27 February 2016.

Four students from Chemical Engg department Ms. Vanitha, Mr. Ashok Shetty, Mr.Manoj G and Mr. Sagar were provided financial assistance from ISTE students Chapter for Participation in "National Conference on "Disaster Management and Satellite environmental application" organized by Department of Chemical Engineering, SIT, Tumkur on 19th March 2016.

3.1.6-Give Details of Workshops/Training Programs/Sensitisation Programs conducted/Organised by the institution with focus on Capacity Building in terms of Research and Imbibing research culture among the staff and Students.

Details of Workshops/Training Programs/Sensitisation Programs conducted/Organised by the institution with focus on Capacity Building in terms of Research and Imbibing research culture among the staff and Students are given in **Annexure F-5.**

3.1.7 Provide details of prioritized research areas and the expertise available with the institution.

List of faculty members and their prioritized research areas available with the institution:

Sl. No.	Name of the Faculty	Department	Area of Research
1.	Dr. B.E.Rangaswamy	Bio Technology	Atmospheric Microbiology/Aerobiology/Microbial biotechnology
2.	Dr. Srinivas Redddy Bathula	Bio Technology	Medical biotechnology
3.	Dr. B.V.Ravishankar	Bio Technology	Plant biotechnology/biofules
4.	Dr. N.S.Manjunath	Bio Technology	Microbiology/immunotechnlgy
5.	Dr.B.G.Pujar	Bio Technology	Bio fuel, Bio- transformation & fermentation
6.	Dr. B.M.Kulkarni	Chemical	Bio-Fuel development
7.	Dr. G.P.Desai	Chemical	Environmental Engineering
8.	Dr. C.M.Kalleshappa	Chemical	Extraction / Mass Transfer
9.	Dr. Mamatha.M	Chemical	Environmental Engineering

Sl. No.	Name of the Faculty	Department	Area of Research
10.	Dr. C.R.Nirmala	Computer Science and Engineering	Artificial intelligence, Machine Learning, Semantic web Mobile Agents, Big data Analytics, data mining, Cloud Computing and sensor Networks
11.	Dr. Pradeep N	Computer Science and Engineering	Image Processing, Machine Learning and Pattern Recognition.
12.	Dr. H B Aravinda	Civil Engineering	Environmental Quality, Water and Waste water and River water quality
13.	Dr. Suresh S	Civil Engineering	Environmental Quality, Restoration of Lake and urban development
14.	Dr. Anil Kumar C P	Civil Engineering	Marine structures
15.	Dr.Vijayananda M D	Civil Engineering	Pre stressed concrete
16.	Dr. Suresh B	Civil Engineering	Environmental Quality and River Ecology
17.	Dr. Veena Kumara Adi	Civil Engineering	Bioremediation
18.	Dr. G.S.Sunitha	E&C	Communication & Networking Coding theory, Digital Signal Processing, HDL & VLSI
19.	Dr. Suresh Chandra Mohan	E&C	Digital Communication, Error Correction Coding, Wireless Sensor Networks, Routing Algorithms
20.	Dr. M.S.Nagaraj	E&E	Power Systems-Fuzzy Logic, Artificial Neural Networks
21.	Dr. B.Poornima	Information Science &Engg	Artificial intelligence, data warehouse and mining, image processing
22.	Dr.S.Subrahmanya swamy	Mechanical	Composites, Machine Tool Design, Machine tool Vibration, High Speed Machining, Product development
23.	Dr.S.Kumarappa	Mechanical	Alternative fuels for IC engines Electronic Engine Management System
24.	Dr. Kankuppi Sadashivappa	Mechanical	Polymer Aerogel composites, Metal Matrix Composites, synthesis and Characterization of nano particles.
25.	Dr.C.B.Suresh	Mechanical	Management
26.	Dr.Thippeswamy Ekbote	Mechanical	Polymer Composites
27.	Dr.G.Manavendra	Mechanical	Heat Transfer & IC Engine
28.	Dr.A.G.Shankar Murthy	Mechanical	Advanced material Processing, Metal Cutting
29.	Dr.K.C.Devendrappa	Mechanical	Polymer composites
30.	Dr. Sharanaprabhu C.M	Mechanical	Fracture Mechanics
31.	Dr. Sharan.A.S	Mechanical	Mechatronics,Fluid Power,Composites
32.	Dr.K.MurugeshBabu	Textile Technology	Fibre Science - Silk Technology, Silk Based Biomaterials, Natural Fibre Processing and Characterization, Textile Chemistry, Antimicrobial Finishing of Textiles, Natural Fibre Composites, Total Quality Management, Human Resource Management.
33.	Dr. K.S.Basavarajappa	Mathematics	Mathematical modeling in Bio-Mechanics
34.	Dr. N.S.Basavarajappa	Mathematics	Differential Geometry
35.	Dr. B.E.Basavarajappa	Chemistry	Organic Chemistry, Bio chemistry Water and Waste Water, Management, Air and Water quality Monitoring, Ground Water Chemistry, Studies on Environmental parameters. Medicinal Chemistry

Sl. No.	Name of the Faculty	Department	Area of Research
36.	Dr. G.K.Prakash	Chemistry	Organic Chemistry,Synthetic organic chemistry,Medicinal Chemistry, Wood Chemistry
37.	Dr.H.R.Mallikarjuna	Chemistry	Inorganic Chemistry,Dyes and Pigments, Analytical Chemistry
38.	Dr. Chethana Prakash	MCA	Computer Science & Engineernig
39.	Dr. Prasad M	MCA	Digital image processing

3.1.8 Enumerate the efforts of the institute in attracting researchers of eminence to visit the campus and interact with teachers and students.

The Institute has invited many renowned researchers from academic and industrial background to visit the campus and interact with faculty members and students through national and international conferences organized by the departments, seminars, workshops and innovative project competitions.The list of experts visited the institute is given in the **Annexure F-2.**

3.1.9 What percentage of the faculty has utilized Sabbatical Leave for research activities? How has the provision contributed to improve the quality of research and imbibe research culture on the campus?

The Institute is committed to provide all the essential assistance to the faculty for pursuing research and innovation. As a learning organization, it lays great thrust on the promotion of research.

From 2006 to 2012 around 15% of the faculty availed leave for research activities. From 2014 onwards two faculty have been given the benefit.

The Ph.D. scholars on sabbatical leave are able to evince full concentration and complete their research degree successfully.

Leave with pay is given to the faculty members for research activities. This has contributed significantly for research promation.

A total of 26 faculty members have successfully obtained Ph.D. degree after joining BIET.

A total of 30 faculty members have registered for Ph.D. under VTU and JNTU, Hyderabad and Kuvempu University.

A total of 24 faculty members have received funding for their research proposal under AICTE, MOEF, DST, DBT, VGST, CSIR and KSCST major/minor research projects.

Various funding schemes have enabled researchers to publish their findings in reputed journals.

3.1.10. Provide details of the initiatives taken up by the institution in creating awareness/advocating/transfer of relative findings of research of the institution and elsewhere to students and community (lab to land)

Research and Consultancy Advisory Board signed a Memorandum of Agreement with National Research Development Corporation - Govt. of India for promotion, dissemination and exploitation of technology leading to patents and research publications.

The salient features/findings are voiced through department newsletters,Technowave college magazine, journal publications, presentations in conferences and seminars, publication in IPC

There is a plan to bring out an institutional research journal in the near future in Engineering, Science and Technology.

Research Advisory Committee encourages departments to take up consultancy work with industries and also facilitate the connected processes. Some of the research findings and the technology developed by our faculty have been transferred to industries **(Annexure B-3).**

BIET has undertaken many steps to create awareness on latest technologies and developments with regard to societal issues and disseminating research findings through publication including technology transfer from lab to land**.**

Sensitization/ Awareness activities

Monthly assemblies organized by departmental Forums are used as platforms to create awareness on current technology developments.

Special invited lectures are organized to increase scientific knowledge and also create an opportunity for interaction with experts.

General seminars/talks for students to broaden scientific know how.

Some of the topics discussed were:

Intellectual property in India, Patents etc.
Literature collection and data mining in Research
Research as a career and research Funding agencies
Carriers in biotechnology, Mechanical, Civil etc
Self-employment opportunities for engineering students
Venture capital opportunities in India
Bio-business , Products and services
Public opinion of Biotech foods and its products
Climatic Change
Bio prospecting for human drugs
The tale of Bt Brinjal in India and why it is successful in Bangladesh
India as a global leader in science and Technology
Role of Science & Technology in National Building
Science & technology opportunities in Indian foreign policy
Plagiarism
Quality in science publication and impact factors.
Forces in nature.
MEMS and its applications.
Satellite application on society.
MOM: Mangalayana.
Interdepartmental lectures & discussions are conducted to broaden scientific knowledge
Awareness on health and hygiene –Hand wash, Swine flu,AIDS, SARS, Ebola, Zika Virus, Dengue, Chikungunya, etc
Awareness on issues of societal relevance.
Women empowerment programme

Advocating issues:

The institution has been advocating social and scientific issues during forum meetings, invited talks involving students, teachers and experts from outside:

Propaganda against BT cotton.
The tale of Bt Brinjal in India.
Golden rice, GM mustard.
Discussion on Gadgil report on western Ghats and Ethina hole.
Role and responsibilities of media in reporting science and technology.
Mother tongue the medium of instruction.
Conservation and Environmental issues.
Censorship and freedom of expression.
Freedom for students to elicit their opinion through college magazine Technowave, Students corner in Notice boards as wall magazines.
Smart City Concepts.

Transfer of research findings:

Research findings are published in national and international journals.
Findings are presented in national and international scientific meets.
Students present their findings in conferences and seminars through oral and poster presentations. Some of them have won best paper awards.
Many prototype projects have been developed and some of them won Indian Society for Technical Education best Project awards.
Industry-institute interactions.
MOUs with industries.

Lab to land for community:

Hands on training is given to socio-economically weaker communities in Beekeeping and vermicomposting in selected villages of Davangere.
Distributed Bee boxes and provided vermicomposting units.
Development of silk reeling machines (Pedal operated).
Development of silk hank dyeing machine.
Development of Fabro feel.
Development of vacuum pump.
Development of granite epoxy bed.
Thermal Glass Cutting.

3.2 Research Facilities and Resource Mobilization

The viability of research depends on its ability to adapt to changing trends in funding agencies and willingness to explore multiple options to garner required resources. Since funding agencies focus more towards advanced Research Centres, often driven by their reputation, lesser known institutions, particularly self-financing institutions, need to be proactive in this regard. Consequently, Bapuji Institute of Engineering & Technology has made significant strides in mobilizing research funding through government as well as private sources.

3.2.1 What percentage of the total budget is earmarked for research? Give details of major heads of expenditure, financial allocation and actual utilization

The Institute has maintained separate accounts for research grants received from the state as well central government funding agencies. Further, the

institute also fulfilled its commitment to support research activities through available funds from the management. The following is the expenditure incurred by the institution for research activities in the last four years.

Sl. No.	Academic Year	Budget Earmarked Rs	Recurring Expenditure including salary Rs	Non recurring Expenses Rs	Total Rs
1	2012-13	15000000.00	1749433.00	8067981.00	9817414.00
2	2013-14	15000000.00	10061815.00	7743544.00	17805359.00
3	2014-15	15000000.00	1526349.00	7041881.00	8568230.00
4	2015-16	15000000.00	1150938.00	5797205.00	6948143.00

3.2.2 Is there a provision in the institution to provide seed money to faculty for research? If so, specify the amount disbursed and the percentage of the faculty who has availed the facility in the last four years?

The institute has made provision to support interested faculty members to get seed money for basic infrastructure for starting their research work. Secondly, Institute has provided matching grants for the many ongoing projects. Following are the details of institute funding:

Details of Institute funding

Sl. No.	Academic Year	Budget earmarked in Rs.	Recurring expenditure with salary in Rs.
1	2012-13	3250,000.00	692000.00
2	2013-14	26,00,000.00	119308.00
3	2014-15	26,00,000.00	62620.00
4	2015-16	26,00,000.00	138167.00

Institution provides OOD permission (on request) for faculty doing Ph.D. in other research centres. Each faculty member will be permitted to attend at least one or two conferences/ seminar/workshops in a year. The percentage of faculty who have availed this facility is around 55 % on an average for last four years. Generally financial assistance is provided from the institute.

3.2.3 What are the financial provisions made available for supporting student research projects?

Best Final year student projects were awarded by Institute through Departmental Forums.

Best innovative students' projects are supported for development as pilot study and same has been submitted for different funding agencies. (Some of the KSCST supported projects were submitted for additional funding to DST)

Laboratories, library and internet facilities are made available for both faculty and students' research.

From 2014-15 onwards in addition to KSCST and Vision Group on Science &Technology sponsored students projects, the institute also supported students projects (Major departments two and small departments one) with 5000/- each for the project.

3.2.4 How does the various departments/units/staff of the institute interact in undertaking inter-disciplinary research? Cite examples of successful endeavors and challenges faced in organizing interdisciplinary research.

The institute supports more interdisciplinary research activities and RAC also advocates and assists in framing interdisciplinary oriented research projects.

Kundavada Lake Adaption: Kundavada Lake in Davangere was one the lake which was full of sewage and industry effluent filled. BIET with the department of Civil Engineering faculty provided all technical support in making Kundavada Lake one of the best and healthy lake in India. The lake acts as buffer water storage and it caters to the needs of Davanagerians for at least four months during summer.

BIET has many strong research areas. Notably the department of Biotechnology has been jointly carrying out research activities with S.S.Institute of Medical Sciences & Research Centre on Bio contamination with aerosol. The department is also carrying out research in the area of Biofuel (Bioethanol) with Institute Mechanical Engineering department, and fiber durability and antimicrobial activity with Textiles department.

Department of Chemical Engineering and Mechanical Engineering of the Institute have many collaborative and interdisciplinary approached projects related to Production characterization and engine performance of bio ethanol, and emission analysis of single cylinder Diesel engine and Techno performance evaluation of bio-methanation of kitchen wastes. Further, jointly with Environmental engineering department, they are working on experimental investigation on evaluation of kinetic parameters coefficients for the treatment of distillery waste using activated sludge process.

The Textiles department had collaborative research work on Design and development of Silk hank dying, Fabrofeel instrument to handle fabric with Mechanical Engineering, Electrical Engineering and Instrumentation Technology. For Design and development of compression moulding jointly they worked with Mechanical Engineering Department.

3.2.5 How does the institution ensure optimal use of various equipment and research facilities of the institution by its staff and students?

The laboratory and library facilities available in the campus can be utilized by the staff and students involved in research with no time restriction. Departmental log books are also available to record the usage.

Institute provides sufficient budget for every department for purchase of latest equipment in line with their academic and research requirements.

Facilities created for Research & Developmental activities in the institute research centers of the institute are also allowed to be used by research students from other colleges/institutes.

Research Scholars from other colleges/universities approach our R&D centers through proper channel from their Guides/heads of the institutions. Principal/head of the research center permits to use the

facilities. As a policy, students are allowed to utilize the facilities at free of cost. However, recurring expenditure has to be met by the student.

Students from Bapuji College of Dental Sciences, Davangere, College of Dental Sciences, Davangere, Bapuji Pharmacy College, Davangere, Students from Davangere University and many other institute students have utilized facilities available at Biotechnology, Chemical Engineering, Textiles, Mechanical Engineering, Environmental Engg, and computer Science & Engg department's research centre facilities for their students project work.

Through various structured certification programs the facilities in Biotechnology department, Computer Science & Engineering IBM Centre for Excellence, VGST and AICTE supported facilities/ labs are made available to all the students and faculty members. Further, students pursuing final year interdisciplinary approached projects are encouraged to make use of these facilities to the full extent.

Availability of journals- Print and E-Journals.

Library is kept open beyond working hours.

Deparments are kept open on request for research scholars beyond working hours.

Students projects are framed keeping in mind the research facilities in the department.

Laptops are provided to each department for exclusive use in research.

Many departments conduct professional training to students and faculty using their state of art infrastructure

3.2.6 Has the institution received any special grants or finances from the industry orother beneficiary agency for developing research facility? If 'yes' give details. Yes

IBM Centre of excellence: A joint lab facility with IBM was established in the year 2010

M/S Indian Cane Power Ltd a unit of Samson Distilleries has contributed 50% of the project cost i.e. 20 lakhs for the Joint project initiated at Environmental Study centre.

Vision Group on Science & Technology, Govt. of Karnataka, AICTE and VTU supported laboratories worth Rs. 52.90 Lakhs through grants at Chemical Engineering department and was established in the year 1998-99, 2010-12 and 2012-15

AICTE and Vision Group on Science & Technology, Govt. of Karnataka , Department of Science & Technology, Department of Biotechnology, Govt. of India have supported laboratories worth Rs. 50 lakhs through grants at Biotechnology department and were established in the 2009-10, 2012-13, 2013-14 and 2014-15

VTU and AICTE have supported laboratories worth Rs. 23 lakhs through grants at Biomedical Engg. department and was established during 2009-11 and 2011-12

AICTE, Vision Group on Science & Technology, Govt. of Karnataka and Department of Science & Technology have supported laboratories worth 1.25 crore through grants at Mechanical engineering Department and were established from the year 1998 onwards

AICTE supported laboratories worth Rs. 30.9 lakhs through grants at Civil Engineering department and were established during 2002-03, 2008-09, 2009-10 and 2012-13

Vision Group on Science & Technology, Govt. of Karnataka supported laboratory worth Rs. 38 lakhs at Computers Science & Engg department during 2014-16. In addition department has established labs supported by AICTE worth Rs. 18.90 lakhs

AICTE supported laboratories worth Rs.32.3 lakhs through grants at Electrical & Electronics Department and were established in 97-98, 2003-04 and 2013-14

AICTE has supported laboratory worth Rs.15.3 lakhs through grants at Electronics & Communication Engineering department.

AICTE has supported laboratory worth Rs. 10.3 lakhs through grants at IS7E engineering department and were established during 2002-03, 2007-08.

AICTE supported laboratories worth Rs.32.3 lakhs through grants at Electrical & Electronics Department and were established in 97-98, 2003-04 and 2013-14

AICTE, SDC (Bangalore) KSPDC, and DIC supported laboratories worth Rs. 1.7 crores through grants at Textiles engg Department and were established from 1996 to 2013

AICTE, NRDC, DST, KSPCB, and VTU have supported laboratories worth Rs. 67.91 lakhs through grants at Chemistry and Environmental study centre and were established in 1998 to 2012.

For all the above laboratory establishments institute has provided matching grants.

3.2.7 Enumerate the support provided to the faculty in securing research funds from various funding agencies, industry and other organizations. Provide details of ongoing and completed projects and grants received during the last four years.

The RAC and Dean, Research and development appraise various schemes and availability of funds from funding agencies for faculty research programmes. Research and development wing has conducted motivation lectures by experts to motivate faculty and students to engage in research.

Talks on how to formulate a research project are also conducted for the benefit of the faculty.

The RAC has been encouraging faculty to undertake research leading to Ph.D., and as a consequence, 35 faculty are currently pursuing Ph D.

In addition, the Doctoral committee assists in formulating research proposals, and scrutinizing and channelizing them to various funding agencies.

Necessary technical assistance is also provided at the department level for writing project proposals.

Office support and administrative sanctions are given promptly to ensure speedy submission. A total of 31 major and 83 minor research projects have been sanctioned by various funding agencies.

With great thrust on making and sustaining research culture among the stakeholders in the campus, the institute provides all the possible support and encouragement.

Details of supports extended are the following:

In the form of seed money to young faculty i.e. research facilities and requirements were provided for project proposals submitted by the department to carry out initial research.

The institute encourages and helps the faculty in preparing the research proposals (all financial support through departmental expenditure) and on their behalf interacts with research agencies like AICTE, VGST, DST, DBT, ICMR etc. Investigators will be deputed for presentation by providing TA/DA.

The institute helps the Principal Investigators of the ongoing research projects to interact with experts from other academic institutes and industries in the concerned fields. This facilitates bilateral visits and discussions with national and international researchers and also recommends the faculty for training and attending workshops and conferences in the emerging areas in which project proposals are to be submitted. It also extends all administrative support for filling up the application, procuring and servicing of equipment and preparing Utilization Certificate and Statement of Expenditure for the funds received from different funding agencies in time to time.

Details of funds received (Major and Minor Projects) are given in **Annexure B-5.**

The institute has organized many seminars/workshops/conference/FDP's supported financially (partly) by different funding agencies and through internal funding like ISTE-BIET faculty chapters and ISTE-BIET students Chapters. Details are provided in **Annexure F-5.**

3.3 Research Facilities

Research includes creative work undertaken on a systematic basis in order to increase the stock of knowledge. Research is used to establish or confirm facts, reaffirm the results of previous work, solve new or existing problems, or develop new theories. A research project may also be an expansion on past work in the field. Research approach also confers personal and professional skills that are integral to develop a knowledge-based society. The culture of enquiry-based, independent learning in a research environment is at the heart of the student experience in BIET. The institution is committed to deliver the added value of a research-informed learning experience by creating facilities for a research environment.

3.3.1 What are the research facilities available to the students and research scholars within the campus?

State of the art infrastructure (space and equipment) and support facilities are available for undertaking research for students and scholars. Some of the major facilities created and made available for students, research scholars and faculty members are as detailed in **Annexure B-6.**

3.3.2 What are the institutional strategies for planning, upgrading and creating infrastructural facilities to meet the needs of researchers especially in the new and emerging areas of research?

The Institute RAC in consultation with Head of the Departments is delegated with the responsibility of planning research development in BIET. IQAC and Doctoral committee also plays a key role in incorporating research plans into its action plans by taking inputs from the departments and RAC. Research requirements are submitted from each department along with the departmental budget annually to the Principal for consideration.

Departments raise a list of special requirements and send requests to management for consideration to establish various facilities in the institute. The outcomes of such strategic planning include facilities provided to all the departments in the institute. Further, faculty are encouraged to write research proposals to funding agencies, which has helped in creating palpable assets.
In addition to all the above, following are the strategies adapted by the Institute to meet the needs of researchers in the new and emerging areas of research work:

- Planning the Budget for the next five years towards research facility/programme.
- Upgrading the existing facilities of the research.
- Collaborating with industries for research work.
- Harnessing talents among the faculty members.
- Identifying emerging areas and possible funding agencies.
- Enabling faculty members to conduct basic research in the specific areas with seed money provided by the institute to prepare detailed project proposal and get funding from specific agencies.
- Interaction with alumni who are in research domain.

3.3.3 Has the institution received any special grants or finances from the industry or other beneficiary agency for developing research facilities? If 'yes', what are the instruments/ facilities created during the last four years?

Funding agencies sanction for equipment components as a part of the research grant. Equipments which are mentioned as a part of proposal submitted, are purchased from quality manufacturers / suppliers. Details are provided in **Annexure B-7.**

3.3.4 What are the research facilities made available to the students and research scholars outside the campus/other research laboratories?

Bapuji Institute of Engineering and Technology has signed MoUs with more than 20 industries and reputed institutions. In addition it has maintained an excellent rapport with various research organizations and industries and received generous support of their expertise and facilities.The Institute and faculty are members of professional bodies and also hold several responsible positions at the national and international levels. In addition to existing research facilities in the Institute, researchers have been utilizing the facilities of the following institutes:

Indian Institute of Science, Bangalore
National Aeronautical Laboratory, Bangalore
ISRO
Karnataka Remote Sensing Application Centre
Nano RAM Technologies, Bangalore
University of Agriculture Science, Dharwad
Davangere University
Natural Remedies
HAL, Bangalore
BEL, Bangalore
Central Silk Board,
Biozeen, Bangalore
CFTRI, Mysore
Lab land biotech, Mysore
IOE, Mysore University
IBM, Bangalore
IESA collaboration labs
Krishi Vignana Kendra, Davangere

Following is the list of industries and institutions with whom BIET has signed MoUs:

Cargill India Pvt.Ltd., Belludi, Harihar (Taluk), Davangere
M/s Indian Cane Power Ltd., Unit: Samsons distilleries, Duggavathi Village, Davangere
Shamanur Sugars Ltd. Duggavathi Village, Davangere
Synthite Industries Pvt. Ltd
Skanda Life Sciences Private Limited, Bangalore
Laxmi Genchem Sciences Pvt Ltd., Hyderabad
Central Dogma Pvt.Ltd., Pune
Biozeen- Bangalore Biotech labs Pvt.Ltd., Bangalore
Davangere Sugars Co.Ltd., Kukkuwada, Davangere
College of Dental Sciences, Davangere
Applied Cognition Systems Pvt. Ltd., (APCOG Systems), Bangalore.
Infosys Campus Connect
IBM Academic Initiative
EMC^2 Academic Alliance
VMware IT Academy program
Sri Mukesh Patel School of Technology, Management and Engineering.
M/S ASKAR MICRONS, Mysore
DHIO Research and Engineering, Pvt. Ltd. Bangalore
Trident Tech Labs Pvt. Limited
M/s EdGate Technologies Pvt. Limited
M/S UCAM Industries, Bengaluru
M/S Acumac Machine Tools,Bengaluru

Further, project review meetings are held every month in the departments to guide student project batches. Indian Society for Technical Education students' chapter activities enable the students to interact with professionals from the industry and academia to undertake in-plant training and projects of research institutes and industries.

3.3.5 Provide details on the library/ information resource Centre or any other facilities available specifically for the researchers?

The institute Library is well equipped with 1,10,800 (One lakh ten thousand eight hundred) volumes of books covering all branches of Engineering, Basic science and General readings. The collection comprises mainly with books, project reports, current journals, back volumes, ISI Codes, Doctoral thesis proceedings of conferences etc.The library capitals interms of books, journals and other learning materials and technology-aided learning mechanisms which enable students to acquire information, knowledge and skills required for their education/training programmes. Faculty members and students utilize this facility and come out with effective outputs in terms of publication, consultancy, funded projects, innovative products and solutions. Details are provided in **Annexure D-1.**

The college is one of the important centers for various faculty development programmes and training. More than 75 programmes have been conducted by the various departments.

3.3.6 What are the collaborative research facilities developed / created by the research institutes in BIET? For ex. Laboratories, library, instruments, computers, new technology etc.

BIET does not have much collaborative research facilities established in its campus. However, it may be noted that,

- M/s Indian Cane Power Ltd., Unit: Samson's distilleries, Duggavathi has supported 50% of Research grants to research project sponsored from VTU to Environmental Study Centre
- BIET has taken up a collaborative science and technology promotion activity jointly with KRVP, Davangere Science Centre, and KSCST of Indian Institute of Science, Bangalore to create interest in science and new technologies among students.
- The Institute has MoUs with industries and has carried out research activities of mutual benefit. Example

i. AVAC Two Stage Direct Drive Vane type Vacuum pump Developed for M/s Associated Vacuum engineering, Mysore supported by Industry and KSCST.
ii. The Department of Mechanical Engineering and M/S Acumac Machine tools Bangalore developed High-speed internal grinding spindle as a product and been utilized by students and researchers.
iii. Students and faculty from Developed vertical machining Centre High Frequency milling spindle in association with M/S Askor microns Mysore.
iv. Silk Hank Dying machine developed jointly with Swiss Development Cooperation. The same technology was transferred to 2M industries in Mumbai.

3.4 Research Publications and Awards

3.4.1 Highlight the major research achievements of the staff and students in terms of Patents obtained and filed (process and product), original research contributing to product improvement research studies or surveys benefiting the community or improving the services.

The faculty's investigation results and publications contribute substantially to the contemporary understanding of science and Technology. Some of these

contributions have industrial applications while several works have possible submissions in improving the quality of life.

Some of the key areas of research and their likely benefits are:

Identification and characterization of anti-microbial agents are likely to be the source of new anti-bacterial drugs for treating various multi-drug-resistant infections

Research carried out in biotechnology department has huge application in Human health and Environment. Aerobiological investigation of different occupational sites i.e. both indoor and outdoor studies provide the data of types of bio-aerosols responsible for infectious diseases in human. Most of the diseases caused by these bio-aerosols are asthma, allergic rhinitis, bronchitis and other respiratory diseases. The above mentioned studies will not only help in identification of disease caused by particular biological particles, it also helps in developing three way correlation model like seasonal analysis, metrological data and organism. By using this kind of data doctors can easily treat patient suffering from different sorts of respiratory disease and even patients can also take precautionary measures.

Instead of cutting plants for cellulose, natural source media for the production of bacterial cellulose has tremendous application in pharma and food industry.

Developing the mechanism for thermal gas cutting has huge industry requirements.

Development of a mathematical model for Diabetes patients and use of this application by medical fraternity is an ongoing project.

Exploration of Bacteriophages as an alternative to Antibiotics to target the Emerging Multi drug resistant Bacteria". Exploring the natural resources to target the current problem of multidrug resistance of various bacteria. Safe and cost effective practice in place of conventional therapy of antibiotics has been the advice.

The Electrical and Electronics conducted the surveys about energy efficient devices and bringing awareness about energy conservation, energy auditing and nature of load. Which helped in improving quality of power services

Many other student projects have high scientific relevance, and a few have resulted in publications and awards.

Following are research inputs contributing to new initiatives and social developments:

Table 3.4.1 Details of Patents filed so far

Sl. No.	Title	Name of inventor	Department	Patent Application number
1.	Natural source media for the production of bacterial cellulose	Rangaswamy B.E. and Vanitha K.P	Bio Technology	201641004194, Dated: 5/02/2016.
2.	Thermal glass Cuttings	Dr.K. Sadashivappa	Mechanical	880/MAS/97 1997
3.	Method of Cluster Head Node Selection by Normal Node during Formation of Clusters in WSN	Dr. Nirmala C R Prof. Anup Kumar Bongale	Computer Science	201641016294, Dated: 26/4/2016

Table 3.4.2. Original Research contributing to product development

Sl. No.	Product	Developed by	Use/Application
1.	Microbial cellulose	Dr. B.E. Rangaswamy Vanitha K.P.	Microbial cellulose which as wide application in pharmaceutical, cosmetics, fashion design, food and paper industries
2.	Sizing machine	Prof.Y.Vrushabhendrappa Dr.S. Subrahmanyaswamy Mr.K.B.Ravindra	Yarn Sizing
3.	High Speed Internal Grinding Machine	Dr.S.Subrahmanya swamy	Grinding of bushes used in bearings
4.	Fabrofeel		Measure the Handle of a Fabric
5.	Vacuum pump		Process industry
6.	Silk hank Dyeing machine		Silk dyeing
7.	Steady Rest		Work/job holding for grinding process
8.	Garment Dying		For dyeing garment
9.	Production of Biodiesel from different feed stock.	Dr.S.Kumarappa	Alternative fuel for I C engine
10.	Design & development of Biomatenization pressure for organic waste.		Cooking at ladies hostel
11.	Design and development of high pressure injection for diesel engine.		I.C engine application
12.	Conversion of Flower wastes into Bioethanol and Performance Evaluation on Single cylinder IC Engine.		Biofuel
13.	CNC X.Y.table for Hot air cutting of glass	Dr.K.Sadashivappa	Profile cutting on plate glass
14.	Bioethanol from cellulose	Dr.B.M.Kulkarni	Renewable energy
15.	Biodiesel from acid oil		
16.	Biogas from kitchen waste		
17.	Biodiesel from pupae oil		
18.	Developed a biomethnation process for conversion of organic waste (Food / Vegetable / Kitchen) into biogas.	Dr.S.Kumarappa	Renewable energy
19.	Engine performance and emission characteristics of single cylinder diesel engine working on liquid fuels produced from agricultural waste		
20.	Design and fabrication of vertical wind turbine for power generator at highway medians		

Sl. No.	Product	Developed by	Use/Application
21.	Investigation on conversion of flower wastes into bioethanol and performance evaluation on single cylinder IC engine	Dr.S.Kumarappa	Renewable energy
22.	Performance analysis and emission of a neat Jatropha Biodiesel fueled Turbocharged CRDI Diesel Engine.		
23.	Investigation on Conversion of municipal Plastic wastes into liquid fuel compounds, Evaluation of Engine performance and emission characteristics.		
24.	Comparative study of Biodiesel Extracted from waste cooking oil and Pongamia (Honge) oil in single cylinder CI engine operated with direct Electronic fuel injection.		
25.	Production Characterization of Biodiesel from pupae- A byproduct of silk reeling industry and Engine performance analysis & emission characteristics of CRDI Diesel engine.		

3.4.2 Does the Institute publish or partner in publication of research journal(s)? If 'yes', indicate the composition of the editorial board, publication policies and whether such publication is listed in any international database?

The institution does not publish any research journals. However, Dr. B.E.Rangaswamy, Professor and Head, of Department of Biotechnology is the Chief Editor of the National journal named "Indian Journal of Aerobiology (ISSN 0971-1546)" and Department of Biotechnology is the Editorial office since 2010. Currently the journal 28th Volume publication is under process. This journal considers original articles in the field of Aerobiology, Allergology, Palynology, Biochemistry, Geology, Climatology, Bio pollution and allied subjects for publication. The manuscript is accepted only if it is in accordance with the guidelines provided and rigorous review procedures have been adopted.

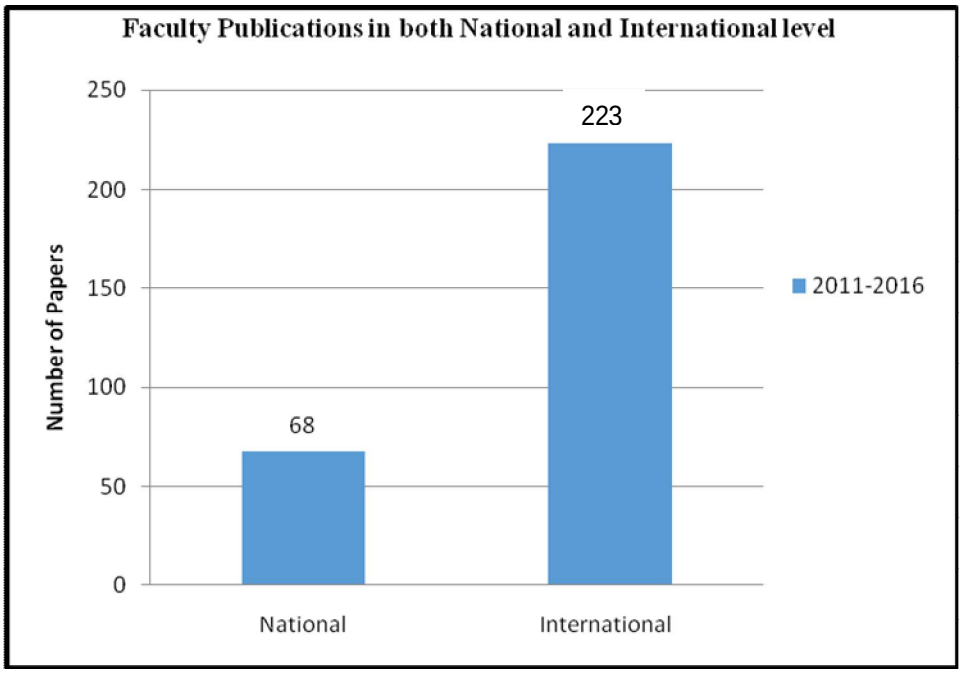
Further, institution promotes faculty and students to publish research findings. Many faculty members named Dr. Subrahmanya swamy, Prof. Y Vrushabendrappa, Dr. H.B. Arvinda, Dr. K. Murugesh Babu, Dr. C.R Nirmala,

Dr. G.P Desai, Dr. K. Sadashivappa, Dr. B.M. Kulkarni, Dr. Kumarappa, Dr. Srinivas Bathula, Dr. M.S.Nagaraj, Dr. Suresh Chandra Mohan and Dr. K.S. Basavarajappa are referees/reviewers in many national and international journals.

3.4.3 Give details of publications by the faculty and students

The facility available inside and outside the campus from the institute motivates the researchers, students and faculties to carry out more research work. From their efforts a total of 291 (223 international and 68 national) publications have been made possible.

Table 3.4.1 Details of faculty and students Research publication



All the 291 publications are peer-reviewed.

Student publications are also incorporated and accounted in faculty publications as co-authors

Number of publications listed in International Database (for Eg: Web of Science, Scopus, Humanities International Complete, Dare Database-International Social Sciences Directory, EBSCO host, etc.): Most of the research papers listed in the database.

3.4.4 Provide details (if any) of research awards received by the faculty, recognition received by the faculty from reputed professional bodies and agencies, nationally and internationally, incentives given to faculty for receiving state, national and international recognitions for research contributions.

Following table depicts various awards and recognitions conferred on our faculty.

Sl. No.	Description	
1.	Faculty	Dr. H B Aravinda
	Department	Civil Engineering
	Name of the award	Scientist of the year - 2011
	Awarded by	National Environmental Science Academy, New Delhi – 110 019
	Awarded on	2011
	Awarded for	His Contribution and services in the field of Environmental Science and Engineering
2.	Faculty	Dr. Suresh B
	Department	Civil Engineering
	Name of the award	Sunderlal Bahuguna Young Scientist Award
	Awarded by	BOSE Science Society, Arimalam - 622201
	Awarded on	2011
	Awarded for	Valuable service and contribution to Environmental Science
3.	Faculty	Dr.S.Kumarappa
	Department	Mechanical Engineering
	Name of the award	Best Project
	Awarded by	Agastya International foundation “Anveshana 2015”
	Awarded on	2016
	Awarded for	Conversion of Flower wastes into Bioethanol and Performance Evaluation on Single cylinder IC Engine
4.	Faculty	Dr.S.Kumarappa
	Department	Mechanical Engineering
	Name of the award	Best Project
	Awarded by	Agastya International foundation “Anveshana 2016”
	Awarded on	2016
	Awarded for	Demonstration of hybrid wind turbine for power generation at highway medians and on roof tops
5.	Faculty	Dr.S.Kumarappa
	Department	Mechanical Engineering
	Name of the award	Outstanding project of the Year 2014
	Awarded by	Karnataka state biofuel development board, Government of Karnataka
	Awarded on	2014
	Awarded for	Conversion of Flower wastes into Bioethanol and Performance Evaluation on Single cylinder IC Engine
6.	Faculty	Dr.K.Sadashivappa.
	Department	Mechanical Engineering
	Name of the award	Sr. Research fellow
	Awarded by	CSIR, New-Delhi
	Awarded on	1992
	Awarded for	Form errors in hydraulic actuator pistons research project
7.	Faculty	Dr.B.M.Kulkarni
	Department	Chemical Engineering
	Name of the award	Anveshana 2015
	Awarded by	Agastya international foundation
	Awarded on	September 2015
	Awarded for	Project exhibition for domestic type wind energy
8.	Faculty	Dr.G.P.Desai
	Department	Chemical Engineering
	Name of the award	Anveshana 2016
	Awarded by	Agastya International foundation
	Awarded on	October 2016
	Awarded for	KSCST Best Project Award

Sl. No.	Description	
9.	Faculty	Dr. K. Murugesh Babu
	Department	Dept. of Textile Technology
	Name of the award	Common Wealth Fellowship
	Awarded by	Common Wealth Fellowship
	Awarded on	2014
	Awarded for	Invited as a visiting Professor to establish new textile laboratories, capacity building, curriculum development and staff training
10.	Faculty	Dr. K. Murugesh Babu
	Department	Dept. of Textile Technology
	Name of the award	Research Fellowship HK Polytechnic Hong Kong.
	Awarded by	Research Fellowship By Institute of Textiles & Clothing Hong Kong
	Awarded on	2007-08
	Awarded for	To carry out post-doctoral research on Advanced Textile Materials such as Shape Memory Textiles
11.	Faculty	Dr. K. Murugesh Babu
	Department	Dept. of Textile Technology
	Name of the award	Research Fellowship
	Awarded by	IIT, New Delhi
	Awarded on	1997-2001
	Awarded for	Ph.D. Study at IIT, Delhi
12.	Faculty	Dr. K. Murugesh Babu
	Department	Dept. of Textile Technology
	Name of the award	Research Fellowship
	Awarded by	Oxford Bio Materials, U.K
	Awarded on	2006
	Awarded for	To carry out post-doctoral research as a Visiting Research Scientist to carry out research on Silk Based Biomaterials.
13.	Faculty	Dr.Manjunath N.S
	Department	Biotechnology
	Name of the award	Seed Money to Young Scientist for Research (SMYSR 2012-13)
	Awarded by	VGST, Bangalore
	Awarded on	2012-13
	Awarded for	To take initiative to take up Research in the field of interest
14.	Faculty	Prakash K.K
	Department	Biotechnology
	Name of the award	Young Scientist Award,
	Awarded by	VGST, Bangalore
	Awarded on	2014-15;
	Awarded for	To take initiative to take up research in the field of interest
15.	Faculty	Prakash K.K
	Department	Biotechnology
	Name of the award	P.H. Gregory Young scientist award
	Awarded by	Indian Aerobiology society
	Awarded on	2012
	Awarded for	Best Presentations
16.	Faculty	Dr.B.E.Rangaswamy, Dr.Manjunath N.S, Sujatha M.L
	Department	Biotechnology
	Name of the award	Best Project of the Year award with certificate and cash prize
	Awarded by	SDM institute of Technology, Ujire SPP sponsored by KSCST.
	Awarded on	13th and 14th of July 2012.
	Awarded for	State level seminar and exhibition- Seminar presentation
17.	Faculty	Dr. B.E.Rangaswamy
	Department	Biotechnology
	Name of the award	P.H.Gregory Young Scientist Award 2007
	Awarded by	Indian Aerobiological Society ® Kolkata
	Awarded on	January 2007
	Awarded for	Best Research paper presentation

Sl. No.	Description	
18.	Faculty	Dr. B.E.Rangaswamy and Prakash K.K
	Department	Department of Biotechnology
	Name of the award	Best paper presentation -20000/- cash award
	Awarded by	Karnataka Science and Technology Academy, Govt. of Karnataka
	Awarded on	December 2013
	Awarded for	Best paper presentation
19.	Faculty	Dr. B.E.Rangaswamy
	Department	Biotechnology
	Name of the award	Travel Grant (1 lakh)
	Awarded by	AICTE
	Awarded on	2012
	Awarded for	To Present paper at 5th European Symposium on Aerobiology, held at Krakow, Poland
20.	Faculty	Dr. B.E.Rangaswamy
	Department	Biotechnology
	Name of the award	Workshop Registration (35000 INR)
	Awarded by	International Aerobiology Association
	Awarded on	2011
	Awarded for	To attend 10th Basic Course in Aerobiology held at Roskilda, University, Denmark
21.	Faculty	Dr.Sharan.A.S
	Department	Mechanical Engineering
	Name of the award	Best Project of the year
	Awarded by	KSCST, Karnataka State Counseling for Science and Technology.
	Awarded on	2016
	Awarded for	Development of Portable Fire Extinguisher using Acoustic waves.
22.	Faculty	Prof. Y. Vrushabendrappa
	Department	Principal/Mechanical Engineering
	Name of the award	Visveswaraiah Navarathna Award for the year 2002
	Awarded by	Bharatharathna Sir. M. Vishweshwaraiah Engineering Prathisthana Trust (R), Bangalore
	Awarded on	14-6-2013
	Awarded for	For his contribution to engineering, land, water & society.
23.	Faculty	Prof. Y. Vrushabendrappa
	Department	Principal/Mechanical Engineering
	Name of the award	Distinguished Engineer of the year 2002
	Awarded by	The Institution of Engineers (India) Karnataka Centre
	Awarded on	15-09-2002.
	Awarded for	Significant contribution as Engineer
24.	Faculty	Prof. Y. Vrushabendrappa
	Department	Principal/Mechanical Engineering
	Name of the award	Bharatiya Vidya Bhavan National Award for Best Engineering College Principal –2001
	Awarded by	Indian Society for Technical Education, New Delhi
	Awarded on	27th November 2001
	Awarded for	This award is given based on his all-round, outstanding, academic, administrative, research work and social work
25.	Faculty	Prof. Y. Vrushabendrappa
	Department	Principal/Mechanical Engineering
	Name of the award	Bharatha Ratna Sir M.Visveswaraiah National Ratna Award-2000.
	Awarded by	National Pollution Control and Environment Conservation Committee
	Awarded on	2000
	Awarded for	For the contribution he has made towards environment conservation, social work and awareness on Pollution Control,

Sl. No.	Description	
26.	Faculty	Prof. Y. Vrushabendrappa
	Department	Principal/Mechanical Engineering
	Name of the award	FELLOW, Indian Society for Technical Education
	Awarded by	ISTE, New Delhi
	Awarded on	18-12-2009
	Awarded for	His contributions in growth and development of ISTE in India
	Department	Principal/Mechanical Engineering

3.5 Consultancy

The institution considers that providing skilled knowledge to the needy is a responsibility and more of a service for building an excellent institution-neighborhood network and bringing rewarding social capital and new well-wishers as a spin off. As part of this commitment and goodwill gesture, the BIET encourages consultancy activities and fulfills its role as information ambassador. This has also provided an opportunity for the faculty to disseminate intellectual know how and helps in bringing new experiences and ideas back to the institution.

3.5.1 Give details on the systems and strategies for establishing institute-industry interface?

Bapuji Institute of Engineering and Technology is one of the pioneer institutions to have advocated academia-industry interface to foster better interactions to ensure a better relationship for mutual benefit. All the departments are encouraged to develop institution-industry networks. The departments and faculty are given freedom to forge such interfaces and are supported financially. This has resulted in many MoUs with institutions and industries. Faculty and students are given academic flexibility for taking part in such interface activities. Following are details of type of interaction:

Sl. No.	Initiator	Type of Interaction	Initiation Period
1.	Training and Placement Cell	For arranging Orientation Programs by Industry experts Students Placement	Middle of the semester
2.	Heads of the Departments and the faculty	Industrial Visits with on sight demonstration and explanation Guest lectures and Industrial training by industry experts	Middle of the semester
3.	Research and consultancy Advisory Board	Consultancy activities	Throughout the year
4.	Students (in consultation with HODs and Training and Placement)	In plant Training and Internship	During vacation period

BIET has an Industry-Institute Partnership Cell striving hard to bridge the gap between Industries and Institute, to foster effective interaction between Industry and Institute to impart meaningful education and to promote industrial consultancy and entrepreneurship. Many of the faculty members have R & D projects sponsored by leading National and International agencies.

A good number of faculty members are active industrial consultants and are engaged in development of processes, prototypes, designs and products. The Training & Placement cell in the institute bringing both corporate as well as other companies close to the campus and encouraging them to establish facilities to cater to the needs of both students and faculty. It enhances the employability of the student by conducting specialized training in aptitude skills, analytical skills, language skills, technical skills in addition to, on line placement mock tests. The recruitment training is conducted by professionals from in house resources as well as professional trainers from the corporate world. The training sessions are scheduled during the semester breaks in addition to crash courses during the start of campus placement season. The Training and Placement cell provides all audio visual facilities for presentations, conferences, written test, group discussion and personal interviews. After confirmation by the company, a pre-placement talk and interview can be arranged on a mutually consented date.

3.5.2 What is the stated policy of the institute to promote consultancy? How is the available expertise advocated and publicized?

The Stated policy of the institution regarding the promotion of consultancy gives space for the following:

Based on the available faculty expertise, relevant industries are identified in consultation with Research and Consultancy Advisory Board and visits and discussions are initiated. Problems in design, manufacturing or testing are taken up as consultancy work to suggest and implement appropriate solutions. The Training and Placement Cell also enables faculty to develop contact with industries and promote consultancy activities.

Institute Governing Council and management have eminent personalities who also give appropriate suggestions for matching the faculty expertise and needs of industries.

Collaboration efforts with industries and signing of MoUs also promote consultancy activities.

The institute has signed a MoU with various industries and institutions. The expertise of the eminent faculty is made known through the Institute website, prospectus and brochures and through personal contacts of the faculty.

3.5.3 How does the institution encourage the staff to utilize their expertise and available facilities for consultancy services?

The faculty involved in consultancy not only serve the locality, but are also the service and knowledge ambassadors of the institution. The institute rewards the faculty for consultancy activities and also provides academic flexibility. Further, institute encourage the staff in

Promoting the capable faculty to interact with the industries.

keeps the dialogue going on the needs of the industry in terms of improving their products and processes

Faculty involved in the consultancy work will be paid incentives (30-40%) and the rest will be given to departments for developmental activities.

3.5.4 List the broad areas and major consultancy services provided by the institution and the revenue generated during the last four years

All forms of consultancy provided by the institute faculty is not charged. Some consultancy is provided free of cost. Most of these consultancy works have been rendered on the basis of our service to the society, which has helped in establishing a good reputation in the region. This has yielded rich dividends in terms of providing opportunities for student project work, on-the-job training, and employment in various forms. Some of the beneficiaries include College of Dental Sciences, Davangere, Bapuji Dental college and Hospitals, Davangere, SSIMS& RC Davangere, and Rotary Club members of Davangere.
Further, the institute has been maintaining successful partnership with the industries and Government departments. The broad areas of consultancy involves knowledge management, training, Pipe testing, Material testing and Testing of Textile fabrics, Soil testing, Water testing, bricks testing etc. In addition, vermicomposting, beekeeping, organic forming, consultancy were provided by department of biotechnology free of cost. The details of consultancy provided to industries are available in **Annexure B-8.**

3.5.6 What is the policy of the institute in sharing the income generated through consultancy (staff involved: Institution) and its use for institutional development?

The institute has made provision for part of the revenue generated to be given to the faculty involved in consultancy activities. Rest will be utilized for development of the process/facility in the concerned departments. The incentives to be given to faculty as a part of consultancy depends upon the nature of the project, cost and expenses incurred during developing solutions and so on. Generally the cost and expense works out to 40- 60% of the revenue and faculty is given with 30 – 40% of the revenue generated. As stated earlier, not all consultancy service provided is chargeable. It is part of our commitment to serve the neighborhood, which has enabled BIET to establish good social capital and derive rich tangible and intangible dividends for the students and institution.

3.6 Extension Activities and Institutional Social Responsibility (ISR)

The BIET in its mission for influencing the knowledge base, intellectual abilities and services cannot afford to wary away from promoting other aspects of students' careers. It is mandatory today to shape the future society by inculcating the spirit of social responsibilities among learners to ensure that they become tomorrow's professionals, business managers, teachers, politicians, citizens and parents with appropriate concerns for their social setting. While they need to be able to demonstrate key skills and knowledge to play these roles effectively, they must also demonstrate personal and social responsibility in carrying them out. BIET has a rich heritage of serving communities through its set of activities which go beyond traditional notions of extension in order to become a truly engaged institution. The institution inculcates social sensitization, involvement and responsibility amongst young learners, faculty and the institution as a whole to ensure that all its stakeholders develop a sense of belonging towards the community to deliver on institutional social responsibility.

3.6.1 How does the institution promote institution-neighborhood-community network and student engagement, contributing to good citizenship, service orientation and holistic development of students?

The institution is conscious of its role in campus-community connections and well- being of its surroundings. Therefore, it has initiated a number of community development activities. These include:

Extending the laboratory facilities to other institutes and industries.

Jointly organizing awareness programs e.g., "Environmental Awareness Campaign " in partnership with different schools and Pollution control Board.

Participating as resource persons in other institutions and Universities.

Conducting workshops for High School teachers, primary schools teachers about teaching skills,

Donating blood on life-saving emergency calls.

Our NSS students involve in Swatch bharath Abiyan cleanliness drive.

Providing the Institute facilities and premises to conduct Police department exams, Karnataka State Public Service commission's exams, Banking exams, NEET exam and other Government departmental examinations during weekends.

The institute houses Registered IGNOU study Centre and our faculty members are serving as coordinators.

Letting out the college play ground to neighbouring communities and other institutions in the city for sports Conduction.

Collaborative activities with institutions such as KRVP, IISc, KSCST, KSTA for creating interest in science and technology and promotion of basic sciences.

During natural calamities institute and students has rendered its best service by service and fund contributions.

The institution involves its learners as an integral part of all the community – neighborhood activities through the organized forums of NCC, NSS and Red Cross, LEAD CELL, which smoothly embedded with the calendar of the institution. Service is a form of learning, and it has the potential to make classroom learning more eloquent and the experience of education more holistic.

3.6.2 What is the Institutional mechanism to track students' involvement in various social movements / activities which promote citizenship roles?

The BIET has departmental forums, clubs and societies to enable students to participate in social movements. The institution promotes the idea that more number of students should engage at least in anyone of the extension activities of NCC, NSS, Red Cross, ISTE students Chapter, and Students Academic Council etc., in addition to taking part in various social movements and activities, which promote good citizenry.

Student involvement is continuously monitored by their respective teachers/officers and coordinators. Further, class mentors keep track of their extension and other academic progression continuously. In addition, students participate actively in awareness programs, processions such as environmental awareness programs and programs promoting social responsibilities, thus creating ample opportunities to play an active role in social movements.

3.6.3 How does the institution solicit stakeholder perception on the overall performance and quality of the institution?

The institution solicits stakeholder perception on its overall quality programs of the education through communications and feedback mechanisms. Feedback questionnaires are developed to obtain stakeholder opinions on various programs. Periodic meetings with alumni, parents, visitors, Local Inspection committees, institutions and individuals are opportunities to openly interact and obtain stakeholder perception on various programs and the overall quality of education. Suggestion box at departments offer other opportunities for stakeholders to freely express their opinions. The consolidated information gathered from feedback obtained from the students helps is getting remedial measures to the issue in consultation with HODs, Principal and Director. It is important to note that the BIET has also made conscious effort to take employer feedback orally, which has helped in bringing quality changes.Feed back can be sent online through the website ***www.bietdvg.edu.***

3.6.4 How does the institution plan and organize its extension and outreach Programmes?

The BIET is regularly conducting a number of extension and outreach activities with the active participation of students, which have had a direct positive impact on building academic, social, cultural, community service, adventure, personality development, right skills and attitude among the learners. More importantly, these programs have been helping the institution in building better relations among people, thus aiding in developing a strong society. Some of the major programs include:

- Distributing beekeeping boxes with bees to farmers who attended trainings.
- Provided Hands-on training in vermicomposting and vermiculture in villages
- Provided beekeeping, migratory beekeeping training in villages and some NGOs
- The faculty members have served as resource persons on various occasions and delivered lectures, trained students, teachers and other beneficiaries
- Faculty members organized training programme for primary and high school teachers.
- Faculty members organized computer skill training programme to Govt. and other school employees.
- Faculty members organized three week programme “Technology Barrier Reduction programme (TBRP)” for selected rural students.
- Faculty members jointly with MoEF and KRVP organized Environmental Awareness campaign and sensitization programme
- Organizing a number of awareness programs related to health, safety, conservation and environmental issues
- Visits and help to orphanage homes, mentally challenged children and support for natural disasters

Through these extension and outreach activities, BIET strives to develop discipline, create awareness on important issues that concern individuals, inculcate the art and skills of leadership and more importantly a sense of

responsibility towards fellow beings and to make students become responsible youth for the country.

3.6.5 How does the institution promote the participation of students and faculty in extension activities including participation in NSS, NCC, YRC and other National/ International agencies?

As a part of the curriculum, it is essential for students to enroll in the NCC, NSS, Red Cross, or Sports in the first year of study. All the institute students are members of Indian society for technical education students' chapter members and activity involved in the ISTE activities. Since NCC and NSS strength is limited by the concerned approving agencies, the institution has established many departmental forums for nurturing extension activities among the students. Extension activities are facilitated by the respective faculty advisors. Faculty trained in defense establishments are commissioned as officers to command NCC units/wing.

The ISTE chapter members, NCC Cadets and NSS volunteers are given attendance for attending seminars, conventions, exhibitions, paper presentation, camps and other assignments, and are also accommodated academically via alternate internals/assignments.Students who have brought laurels to the institution are appropriately rewarded by the institution by the distribution of certificates, medals and prizes. The details of activities conducted by ISTE Students Chapter, NSS and NCC are presented in **Annexure H-1and H-2.**

3.6.6 Give details on social surveys, research or extension work (if any) undertaken by the college to ensure social justice and empower students from under-privileged and vulnerable sections of society?

The BIET is very committed to community issues, particularly those associated with women and socio-economically disadvantaged sections. The following activities of the institution reflect the institutional responsibility towards issues of the vulnerable and deprived.

Nearly one thousand families (total of 1012 person trained) spread over 16 villages in Davangere District have been trained in vermicomposting to ameliorate their socio-economic condition. A vermicomposting unit has been constructed (101 units provided and 250 direct beneficiaries) in each village and hands on training is given to all the families of the village. The benefits of the training have resulted in many of the labour class taking up vermicomposting as a lucrative venture. It may be noted that a few farmers have even taken up vermicomposting in a big way with assistance from banks.

Nearly 213 families (total of 213 individuals trained) spread over 7 villages and 3 Self-help groups have been trained in Beekeeping which has helped in increasing their crop production. Beekeeping unit has been provided (51 units) and training has been given to all those interested in these seven villages.

A study entitled "Assessment of air micro flora in KR market, Davangere and its impact on human health" has focused on the various issues related to generation, disposal and impact of air micro flora on human health. A detailed study has revealed the presence many pathogenic bacteria, and fungi and their impact on market dwellers has been assessed.

Rearch project on Aerobacteriologicil and aerobiological investigation of davanagere sites was undertaken to check the quality of air with reference to bacteria and fungi. This investigation may help in controlling the airborne pathogens.

Research project "Role of *Aspergillus* species as allergen in selected population of Davangere and its Genetic predisposition" aims to identify the allergen and also aims to screen the antifungal susceptibility of predominant species. The outcome of this project will help the clinicians to select the proper treatment for the disease.

A student project entitled "Bio-pollution in different environments of Davangere city and its impact on human health" has been systematically studied for various pathogenic organisms in public transport systems, hotels, ATMs, etc. The findings have indicated the presence of pathogens, suggesting public health concerns.

Civil Engineering department constructed low cost toilets in Ambedkar colony of Shamanur Village.

Institute Civil Engg department and environmental study center has surveyed more than 1000 bore well water in four district as part of supporting Govt agency in search of identifying portability of water

Civil Engg department and environmental study center has been conducting Water Quality testing on no charge basis for in and around the Davangere city for poor section of society.

Civil Engg department conducted the survey for rural drainage to ensure hygienic environment and conducted reduced level survey for Schedule cast colony by the students to provide good road network for the benefits of villagers.

Institute undertook the repair work of drinking water tank and fixed water taps to avoid wastage of water for rural area.

Research work conducted by final year students to record water quality, solid waste management and including ambient air quality.

Extensive survey work every year conducted by sixth semester students in any one of the backward villages and educate the people about environment and encourage them to grow more trees.

The department of Mechanical Engg jointly with IISc, Bengaluru provided better technology for puffed rice industries in Davangere. Generally these puffed rice industries were using waste rubber tyres for burning and generating required heat for the process.

3.6.7 Reflecting on objectives and expected outcomes of the extension activities organized by the institution, comment on how they complement students' academic learning experience and specify the values and skills inculcated.

The fundamental objective of Bapuji Institute of Engineering & Technology is to provide holistic education to young engineers to empower them with necessary skill-sets and values to face the challenges of life. In view of this, BIET has been conducting a number of extension activities. This has not only exposed and provided first-hand experiences on important societal issues but also provided learning experience and values, which goes a long way in preparing good and responsible citizen for the country.

The following are some of the extension activities and their benefits:

The National Cadet Corp (NCC), one of the biggest youth organization in the world, with its motto of "Unity and Discipline" looks to inculcate the

qualities of character, courage, comradeship, discipline, leadership, secular outlook, spirit of adventure, sportsmanship and the ideals of selfless service among the youth to make them useful citizens. These virtues are inculcated in the cadets through a series of military training modules with strict adherence to the culture of rank courtesy.

The number of training programs and activities through NSS, LEAD cell, YRCW like tree plantation, blood donation, awareness on conservation of wildlife and natural resources, and a host of other social service activities helps in creating human resources in the form of organized, trained and motivated youth. Further, these extension activities provide leadership skills in all walks of life and these youth are always available for the service of the nation. The institution is striving to create a suitable environment to motivate NCC cadets to take up a career in the armed forces and few of our students joined Indian Army as well.

3.6.8 How does the institution ensure the involvement of the community in its reach out activities and contribute to the community development? Detail on the initiatives of the institution that encourage community participation in its activities?

The BIET has involved local communities in most of its outreach activities, which has not only helped in executing various programs, but also helped in creating awareness about rights and everyday jobs amongst such communities. A few of these include:

Role in Kundavada Lake Restoration: When District administration planed the rejuvenation and beautification of Kundavada Lake, as a social responsibility the institute along with faculty members from Civil engineering and Environmental study center directly involved in lake restoration by providing all possible technical support. Further, which has helped in successfully restoring the lake and also ensured subsequent beautification by the State Government with ministry of Horticulture. The same lake acts as main water supply point for Davanagere. The major role by the institute was sensitizing Kundavada and neighboring villages about its importance.

Vermicomposting: Training on vermicomposting involved 16 villages in Davangere District. Many families have subsequently started producing vermicomposting using locally available organic waste, which they were burning. This has resulted in revenue generation for these families and helped in modifying their socio-economic condition.

Beekeeping: Training on beekeeping involved 7 villages in Davanagere district. Many families have subsequently started setting up of apiary.

Smart city project to Davangere: The institute played a major role with Davangere city Administration in obtaining Smart city project to Davangere. The institute through its students and faculty manage to sensitize the public and other institute students. The ISTE students chapter of the institute conducted Quiz, Essay writing and Idea presentation competitions to students. Further, our students held public awareness rally in the city.

NSS Camps: During NSS camp activities, the local villagers are initially consulted, and the youth of the villages are made to involve in the NSS activities. Village heads have actively participated and supported the volunteers' activities.

Tree plantation: Local participations is ensured during the Environmental awareness camp, tree plantation, blood donation camp drives.

Farmers: Any farmer or resident of Davangere can get water tested by our institute free of cost. The institution has been involving philanthropic individuals and organizations for the furtherance of infrastructure as well as to invigorate institution–community networking through Rotary organization.

Help to puffed rice industries: The Department of Mechanical Engineering jointly with team of IISc scientist provided alternative technology for Davangere Puffed rice industries. This has reduced the level of SPM pollution in and around Mandakki Batti layout of Davangere.

3.6.9 Give details on the constructive relationships forged (if any) with other institutions of the locality for working on various outreach and extension activities.

Institute jointly with Foundation for Advancement Education and Research (FAER) and ZEBRA Technologies, ISTE and YRCW organized a three week unique program for rural High School Children's on Technology Barrier Reduction Program-2016 from 18-04-2016 to 06-05-2016 (21 days). There were 23 Girls students and 09 Boys students were participated from different parts of Davangere Villages.

The institute jointly with Local NGO i.e. Rotary clubs organized two days Comprehensive Chemistry Teacher Training Programme for High school teachers on December 12-13th 2015.

The institute jointly with Davangere Science Centre and Rotary club Davangere Midtown organized "Mane Maddu-Home remedy" programme.

The ISTE chapter of the institute jointly with Rotary club, Davangere Midtown organized programme from Hulikal Nataraj on Buthada Rahasya.

Institute jointly with Davangere Science Centre organized Invited talk by Dr. C.N.R Rao and Vignana Kaliyona Bara and multimedia presentation for school children from Dr. Indumathi Rao of JNCASR, Bangalore.

The institution has joined hands with KRVP and local body of KRVP Davangere to promote science among school children through KRVP approved program.

The sports department is working closely with Youth and sports departments, for conducting sports meets. The institution is working with the NGOs e-Parisara, KSPCB local body for e-waste management and KSPCB has donated E-waste bin for the institution which has been set up at the entrance of the Civil Engg department.

The institute also provided platform for Kannada Sahithya Parishath – District wing and promoted Datthi Upanyasa programs (endowment lectures) in the institute departments.

The institute also supported the activity of SAMVEDA an NGO working for dyslectic kids.

With Davangere Mahanagara Palike institute has organized many programme related to Environment, Earth day, environment day, programmes related to solid waste management and recently workshop on SMART CITY.

3.6.10 Give details of awards received by the institution for extension activities and/contributions to the social/community development during the last four years.

The institute has received "CERTIFICATE OF APPRECIATION" from Davangere Municipality for their significant contribution in development and restoration of Kundavada Lake.

The institute received ISTE BEST STUDENTS CHAPTER AWARD in the year 2013 and 2015 for their overall activities performed. One of the criteria for selection for the award is how many technical, public oriented and societal improvement programmes the institute ISTE Students body has conducted.

The institute has received CERTIFICATE OF APPRECIATION from Indian Society for Technical Education for organizing 25th Indian Society for Technical Education Annual Convention during December 2015. More than 1200 teachers from technical institution participated in two days event.

The Institute also received APPRECIATION CERTIFICATE from Davangere Mahanagara Palike (Davangere City Corporation) for their overall involvement in Davangere Smart City Project.

The Institute has received CERTIFICATE OF APPRECIATION from Indian Society for technical Education, New Delhi for successfully organizing Srinivas Ramanujan Mathematics competitions National Level Award ceremonyheld at Trivandrum, November 28th 2014

NATIONAL EDUCATION LEADERSHIP AWARD as an Outstanding Engineering Institute in South India, Presented by Vijayavani Group, India on 12th September 2015.

3.7 Collaboration

Collaboration of engineering institutions with other institutions and industries is increasingly becoming a serious component of supporting an efficient system of learning. These partnerships are important for imparting quality technical education, training, acquiring new knowledge, innovations, Idea generation, skills development and promotion of entrepreneurship. Students are entering a world of employment which is characterized by greater speed, uncertainty, risk, complexity and interdisciplinary working needs. In this context, BIET has realized the need to prepare its technical graduates for such challenges and embarked on providing training on value based education, skills, knowledge and characteristics through a number of activities.

3.7.1 How does the institution collaborate and interact with research laboratories, institutes and industry for research activities. Cite examples and benefits accrued of the initiatives – collaborative research, staff exchange, sharing facilities and equipment, research scholarships etc.

The institution has embarked on collaborative relationships of both formal and informal nature for the teaching, learning and research activities of the institution. The training and placement cell along with research and developmental wing also maintains a systematic relationship with industries and institutes. The research facilities including for internships, library resources and expert assistance of the following industries and institutions are utilized:

Institute has an MOU with Applied Cognition Systems Pvt. Ltd. (APCOG Systems), Bangalore - a company dealing with Biomedical Instrumentation and healthcare product development. R&D lab has been established in the Department of Biomedical Engineering to provide Technical Training to

meet industry ambience and R&D needs. Project review meetings by APCOG Technical team are held regularly to guide project batches.

The institute has signed MoU with M/S ASKAR MICRONS, Mysore, a leading CNC machine tool manufacture, for the Design and Development of high speed motorized CNC milling spindle.

The institute has signed MoU with DHIO Research and Engineering, Pvt.Ltd. Bangalore for the purpose of technical support in various students as well major projects under taken by mechanical department of the institute.

The institute has signed MoU with Trident Tech Labs Pvt Limited which is the University Program partner of Texas Instruments, India for C2000 Teaching Lab setup.

The institute has signed MoU with M/s EdGate Technologies Pvt Limited which is the University Program Partner of Texas Instruments, India for Analog Lab set up.

The institute has signed MoU with Cargill India Pvt. Ltd (CIPL),Davangere with Biotechnology course at the institute and their employment in the company subject to availability of suitable vacancy.

The institute has signed MoU with Skanda Life Sciences Private Limited, Bengaluru to submit proposals and to carry out Research & Development projects from different funding agencies in the fields of drug discovery research (Diabetes, cancer, osteoporosis etc.), herbal formulation, novel drug delivery systems, medicinal chemistry, cell based assay, animal studies and Nano technology.

The institute has signed MoU with Biozeen- Bangalore Biotech labs Pvt.Ltd,Bangalore - The development of course modules, Training for students in the area of Industrial Biotechnology.

The institute has signed MoU with Central Dogma Pvt.Ltd,Pune, to collaboratively propose, submit and carryout R&D projects, to prepare industry oriented curriculum for the students, internship and placement for biotechnology students on mutually agreed financial and technical terms and conditions in the areas of Molecular biology with diagnostics and training in the areas of bioprocess technology.

The institute has signed MoU with Synthite Industries, Kavalethu, Ranebennur for Students internship for BE biotechnology and Chemical engineering students.

The institute has signed MoU with Laxmi Genchem Sciences Pvt Ltd,Hyderabad to submit and carryout R&D projects, to prepare industry oriented curriculum for the students, internship and if possible placement for biotechnology students.

Indian Institute of Science has considered our institute for extension lecture programme and through KSCST provided technical support to many students' projects.

The institute has signed MoU with Dr. Lal paths lab for providing technical Support and analysis support for HLA-DR typing of blood analysis.

Spinco biotech, Bangalore every year during the workshop visits the campus trains our biotech students for two days on Chromatography techniques.

Leica Instrumentation (DHR Holding Pvt. Ltd) has provided training to our students.

Besides, facilities available at Bapuji Institute of Engineering & Technology have also been provided to the following organizations: Research scholars and students from Davangere University, Bapuji Dental College and

Hospital, Davangere, College of Dental Sciences, Davangere, Students from KSOU-MSc Microbiology for project and others

3.7.2 Provide details on the MoUs/collaborative arrangements (if any) with institutions of national importance/other universities / industries / Corporate (Corporate entities) etc. and how they have contributed to the development of the institution.

The Institute has MOUs with following organization

MoU with Cargill India Private Limited- to impart industrial training/ internship for the students

MoU with M/s Indian Cane Power Ltd-To prepare industry oriented curriculum, internship and placement for the biotechnology students in the areas of Bioprocess and Biofertilizers and Fermentation.

MoU with Oklahoma State University, USA- for joint research, exchange programme etc

MoU with College of Dental Sciences- To aid in joint research projects and to provide related facilities, exchanging research programmes, activities and experiences from various departments.

MoU with Davangere Sugars Co.Ltd: To prepare industry oriented curriculum, internship and placement for the biotechnology students in the areas of Fermentation process technology.

MoU with Shamanur Sugars Ltd: To prepare industry oriented curriculum, internship and placement for the biotechnology students in the areas of Bioprocess and Fermentation technology.

MoU with Biozeen- Bangalore Biotech labs Private Limited- The development of course modules, Training for students.

MoU with Central Dogma Private Limited- To prepare industry oriented curriculum, internship and placement for the biotechnology students.

MoU with Laxmi Genchem Sciences Private Limited- to prepare industry oriented curriculum for the students, internship and if possible placement for biotechnology

MoU with Skanda Life Sciences Private Limited- to conduct conferences/seminars and industrial training/ internship for the students

MoU with APCOG Systems Private Limited, Bangalore-To provide Technical Training to meet industry ambience and R&D needs

MoU with Infosys for Campus Connect Program: To bridge the gap between industry and academia and to increase the employability among the students, Infosys supports academia in hosting the following programs at the institute.

Foundation program : To enhance the programming skills of the students

Soft Skills: To polish the behavioral skills of the students

Aspiration 2020: National level Programming skill testing contest

SPARK Program : Industry visit by the students

MoU with IBM for Academic Initiative: To give training and hands-on exposure to the students about the tools and technologies that the IBM offers to other companies, IBM extends the support in hosting the following programs

Workshop on certification programs like, DB2, RAD, RFT, Lotus, Blue mix cloud Platform and Watson Analytics. Finally, students will be

offered to take certification test free of cost on the above said courses.
TGMC- "The Great Mind Challenge" – National level Software development Contest for the Students.

MoU with EMC2 Academic Alliance: Supports to host the training programs on Storage Area Networks and Data Center networks for faculty and students at our premises or at their premises.

MoU with VMware IT Academy program: Mainly for the purposes of getting exposure to the cloud, App development and Virtualization concepts.

MoU with College of Dental Sciences- To aid in joint research projects and to provide related facilities, exchanging research programmes, activities and experiences from various departments.

M/S UCAM Bengaluru to under take joint industry based projects.

M/S Askar Microns, Mysore to under take joint research work.

M/S Accumac Machine Tools Pvt. Ltd. Bengaluru to under take joint research work.

3.7.3 Give details (if any) on the industry-institution-community interactions that have contributed to the establishment / creation/up-gradation of academic facilities, student and staff support, infrastructure facilities of the institution viz. laboratories/ library/ new technology /placement services etc.

Following are the important outcomes of industry-institute interactions:

Kirloskar make vertical machining centre was purchased and is used for student training. It is also used by small scale industries which are located in and around Davangere.

A turning centre purchased is also used for students training.

Industry-Institute interaction has remarkably improved the academic standards of students and faculty.Some projects which are carried out through interactions are,

- Precision steady rest for grinding machine
- CNC XY table for thermal glass cutting
- Development of jigs and fixtures and hydraulic power pack
- Laser based autosizing device for cylindrical grinding

The support provided by Indian Cane Power Ltd and Samson distilleries in for collaborative research project has been continued. In fact every year students of Chemical engineering and Biotechnology have been using their facility for project and as part of the curriculum both the department students visit every year and for that the industry takes care of their logistics.

The department of Biotechnology of the institute organises one week hands on workshop every year in the month of January. During this workshop the resource persons from industries like, Ganga Gen biotechnologies, Cipla, Amil Service and solutions, Perkin Elmer, etc are invited to share their experience.

Technology upgradtion are provided to our students by TCS, Vmware IT academy, Madura Garments, Raymond's Bengaluru, Textile park, Davangere.

Significant number of students has undergone internship training through this industry-Institute interaction programme. This has remarkable improved the academic standards of students.

There is an improvement in the employment potential.
Social service like blood donation camp was also organized under this interaction programme.

3.7.4. Highlighting the names of eminent scientists/participants, who contributed to the events, provide details of national and international conferences organized by the college during the last four years.

Sl. No.	Name of the speaker	Affiliation	Topic of the talk	Date
1.	Dr. S.K. Shiva Kumar	ISRO	Invited talk	Feb 2009
2.	Dr. Annadurai	ISRO	Interaction	Feb 2009
3.	Dr. Guruprasad B.R.	ISRO	Interaction	Feb 2009
4.	Dr. Balaram Singh	University of Massachusetts, USA	Invited talk	Nov 2010
5.	Dr. S.R. Rao	Senior Adviser, DBT, Govt. of India	Invited talk	Nov 2010
6.	Dr.R.R. Sahay	Director, EDL Laboratory, Clear water, Florida, USA	Invited talk	Nov 2010
7.	Dr. A B. Singh	Deputy Director, IGIB, CSIR Lab, New Delhi	Invited Talk	Nov 2010
8.	Dr. M. Mahadevappa	Chairman, ASRB, New Delhi	Invited talk	Nov 2010
9.	Dr. Sudendu Mondal	Registrar, University of Shanthinikethan	Invited talk	Nov 2010
10.	Dr. N.I. Singh	Professor, Manipur University	Invited talk	Nov 2010
11.	Dr. G.V Patil,	Former Vice-chancellor	Invited talk	Nov 2010
12.	Dr. S.T.Tilak	Former President Indian Aerobiological Society	Invited talk	Nov 2010
13.	Dr. S.N. Agashe	Emeritus Professor (Retd) Bangalore University	Invited talk	Nov. 2010
14.	Dr. C.N.R Rao	Chairman, PM Scientific Advisory Council, Govt of India New Delhi	On Eve of International Year of Chemistry deliver invited special talk	8/9/2011
15.	Dr. Indumati Rao	JNCASR, Bengaluru	Multimedia on Science Learning	9/9/2011
16.	Dr. Madhavan Nair	ISRO	Invited talk	November 2011
17.	Dr. A.P.J. Abdul Kalam	Former President of India	Invited talk	17th& 18th March 2012
18.	Dr. Sreenivasa B	Cardiologist, SSIMSRC, Davangere,	Interventional Cardiology	9/4/2011
19.	Dr.Vasumathi	Textile Consultant, Bangalore	Six Sigma and its application	14/11/2011
20.	Mr.Alex	Senior design Engineer, Columbia	Product design, development and innovation	21/11/2011
21.	Dr. Kishan Bhagwath	Professor, Dept. of Radiology, S. S. Institute of Medical Sciences & Research Centre, Davangere	Recent trends in Radiology & Radio diagnostics	24/2/2012
22.	Dr.Basavaraj M and Gurappa	IIT, Madras	Micro structure & Rhedogy colloids, suspensions & surfactant	1/3/2012

Sl. No.	Name of the speaker	Affiliation	Topic of the talk	Date
23.	Dr.Mittur Jagadish	Senior Biotechnology Consultant, Former Director, Monsanto Research Centre, Bangalore	Career opportunities in Biotechnological research	11/5/2012
24.	Mr.Didimus	Faculty, University of Doula Cameron , Central Africa	Production of products Sida Rhombi folia fiber	30/5/2012
25.	Sri. M O Prashanth	Deputy General Manager, BSNL Davangere	Recent Trends in Telecommunication	10/9/2012
26.	Dr.T.G.K. Murthy	Scientist, ISRO, Bangalore	Space technology and its Excellence	13/9/2012
27.	Dr. Chandrashekhar M Gangangowda	Nayana Super Speciality Hospital & Research Center, Davangere,	Computer Vision Syndrome	15/9/2012
28.	Mr. Sandesh	Deshpande Foundation, BVB Campus, Hubli	Optical Telecom Training Product Demonstration	6/5/2013
29.	Dr. G. Padmanabhan	Former Director, IISC	Invited talk	22/03/2013
30.	Dr.Nandini M.Ghante	Director, IMT-Technologies, Bangalore	Career opportunities in Biotechnology	27/8/2013
31.	Dr. P C Srikanth	HOD, Malnad College of Engineering, Hassan	Recent Trends in Optical Fiber Communication and Networks	5/9/2013
32.	Dr.Manjunath Aradhya	Professor, Dept. of MCA, SJCE, Mysore	Research Methodology	13/9/2013
33.	Dr. Niranjan S K	Professor and Head, Dept. of MCA, SJCE, Mysore	LATEX	14/9/2013
34.	Y J Rao	R V College of Engineering	Technical report writing	21/9/2013
35.	Dr. T. S. Rao	Senior Advisor DBT Govt. of India New Delhi	Research opportunities in Biotechnology and allied sciences	19/10/2013
36.	Dr. A.H. Rajasabh	Vice Chancellor Tumkur University, Tumkur.	Applications of Aerobiological studies.	19/10/2013
37.	Rajashekhar Kumar C	PRENTAC, Bangalore	Oil and gas processing renewables opportunities prospects and employ abilities	7/11/2013
38.	Dr. P.S Ramkumar	Director, Applied Cognition Systems Pvt. Ltd., Bangalore	Information Communication Technology for Elderly Care	6/12/2013
39.	Dr. S. Chandrashekar	Professor, Department of General Medicine, JJM Medical College, Davangere	Opportunities in Healthcare Applications	15/2/2014
40.	Dr. P. S. Balu	Professor, Department of Community Medicine, JJM Medical College, Davangere	Role of Technology in Community Healthcare	15/2/2014
41.	Dr. Shivaprasad S	Professor, Department of Oral Medicine and Radiology, Bapuji Dental College,	Bridging Dentistry with Technology	15/2/2014
42.	Dr. Kishan Bhagwat	Professor, Department of Radiology, S. S. Institute of Medical Sciences & Research Centre, Davangere	New Challenges and Opportunities in Healthcare- Radio-diagnosis	15/2/2014
43.	Dr. U.C Niranjan	Director, Research & Training at Manipal Dot Net, Manipal	Tomosynthesis on GPU	15/2/2014

Sl. No.	Name of the speaker	Affiliation	Topic of the talk	Date
44.	Dr.Anand.B.Halageri	Poorna Prajna Institute of Scientific Research Bangalore	Future energy challenges through biofuels & bio refinery technologies	21/03/2014
45.	Mr. Prasad S.K	MaMinno Technologies, Bangalore	Introduction to Embedded Systems	28/3/2014
46.	Dr. P.S Ramkumar	Director, Applied Cognition Systems Pvt. Ltd., Bangalore	Product Development Life Cycle	26/7/2014
47.	Mr. Sandeep Patil	Project Engineer, Applied Cognition Systems Pvt. Ltd., Bangalore	Signals & Systems, Comparative study of Procedural programming and Object Oriented Programming, & Introduction to SQL	27/7/2014 30/7/2014
48.	Mr. Gokul	Project Engineer, APCOG Systems	Communication Protocols	28/7/2014
49.	Mr. Manjunath	Project Engineer, APCOG Systems, Bangalore	HTML5 and JAVA script	29/7/2014 31/7/2014
50.	Mr. Richard Paul K	Senior Technical Specialist, Alcatel Lucent, Bangalore	Recent Trends in Wireless Communication	19/8/2014.
51.	Mr. Sunil Kumar	Managing Director, VI solutions Pvt., Ltd., Bengaluru	LabVIEW	26/8/2014
52.	Dr.Basavaraj S. Hungund	Prof. & Head, Dept. of Biotechnology, BVBCET, Hubli	Research opportunities in Biotechnology	28/10/2014
53.	Dr. Vijaya	Dean, Academic Program, Dept of E&CE, SDMCET ,Dharwad	Introduction and Basics of Image Processing Techniques	29/10/2014
54.	Dr.Mallikarjun S. Holi	Professor E&IE, UBDTCE, Davangere.	Biomedical Image Processing	29/10/2014
55.	Dr. Sridhar K S	Professor, UBDTCE, Davangere	Mathematics & Research Issues in Image Processing	30/10/2014
56.	Dr. Mallikarjun S. Holi	Professor E& I E, UBDTCE, Davangere	Biomedical Image Processing Applications	30/10/2014
57.	Dr. G. Harish Kumar	Scientist D, SERC-Division, Department of Science & Technology, Govt of India, New Delhi	Talk on various schemes of DST for research funding	18/1/2015
58.	Dr. S. Shishupala	Prof. and Dean, Davangere University, Davangere	MALDI-TOF Mass Spectroscopy	20/1/2015
59.	Dr.Ashok Ganesan Chief Research Scientist, Hospira, Chennai	Chief Research Scientist, Hospira, Chennai	Unit operations in Bioprocess Techniques	22/1/2015
60.	Mr. Balu Vasishta,	Project Engineer, APCOG Systems, Bangalore	Data Acquisition System	5/3/2015
61.	Mr. Lakshmi Prasad	Project Engineer, APCOG Systems, Bangalore.	Microcontroller Architecture	6/3/2015
62.	Mr.Giridhar Srinivas	Scientist, D. CSTRI Bangalore	Prospectus for Textile studies in Silk section	16/3/2015
63.	Ramesh Yalapure	Synthite Industries Ltd., Kavalettu	Value addition of spices	27/3/2015
64.	R.K.Arunkumar	Siemens, Bengaluru	Recent Trends in Automation	6/4/2015

Sl. No.	Name of the speaker	Affiliation	Topic of the talk	Date
65.	Dr.Santhosh K V	Asst. Professor(Sr.), Dept. of ICE, MIT, Manipal	1. Overview on Advanced Instrumentation, Smart Sensing, Sensor Intelligence. 2. Soft Sensors	6/4/2015 7/4/2015
66.	Dr.Mallikarjun S Holi	Chairman, E&I Dept., UBDTCE, Davangere	Advances in Biomedical Instrumentation	8/4/2015
67.	Mrs.Bhagya R Navada	Asst. Professor(Sr.), Dept. of ICE, MIT, Manipal	Image Processing based on Multi Sensor Data Fusion	8/4/2015
68.	Prof.S.Mohan	Former Scientist ISRO, Bangalore.	Advances in Non-traditional measurement devices	10/4/2015
69.	Mr. Rajesh pawar	COGNIZENT Technologies, Bangalore.	Overseas opportunities in IT industry for Mechanical Engineers	10/4/2015
70.	Dr. B.P Rajesh	Professor, Department of Pulmonology, JJM-Medical College, Davangere	Asthma Prevention and Management	24/4/2015
71.	Dr. K.S.Jagadeesh	Prof. in Agricultural Microbiology, UAS, Dharwad	Agricultural Microbiology	8/8/2015
72.	Mr. Somesh	Senior Scientist, ISRO, Bangalore	Mars Orbiter Mission	22/8/2015
73.	Prof.Leiva Van	Ghent University Belgium	Projects and research activities to be taken in association with Ghent University	27/08/2015
74.	Dr. Premasudha	SIT, Tumkur	New Age Technologies	29/8/2015
75.	Mr. Vishnu Bhat	Founder, Blue Neem Technologies, Bengaluru	Advances in Instrumentation and Medical Devices	3/9/2015
76.	Dr.Siddaramaiah	Polymer science & Technology, SJCE, Mysore	Introduction to Nanomaterial	4/9/2015
77.	Mr.K.S.Raju.	M.D,Askar Microns Mysore	Entrepreneurship	5/9/2015
78.	Dr. K. Muniyappa	Prof. and Distinguished Scientist-IISc.,Bangalore	Microbial pathogens & discovery on new antimicrobial agents	8/10/2015
79.	Dr. T. S. Keshava Prasad	Scientist, IOB, Int. Tech. Park-Bangalore	Proteomic approaches for Biomedical Research	8/10/2015
80.	Dr. Keshav A. Bulbule	Technical Advisor to E-Parisara, Consultant to C-MET,Hyderabad	e-waste recycling & environmental protection	8/10/2015
81.	Dr. Aynur Unal	Stanford University, USA	Advanced Image Processing	29/10/2015
82.	Dr. Prof. Karel L Streckx	Director of BU-CROCCS, Thailand	Industrial Applications	30/10/2015
83.	Dr. D K Subramanian	Distinguished Fellow of IDRBT	Current and Future Research trends	29/10/2015
84.	Dr. Samar Shailendra	Scientist at CTO Networks Lab(TCS) & Vice Chair of WG(M2M) at TSDSI	Wireless sensor Networks	29/10/2015
85.	Dr. Rishi Nayar	Head, Global Services and Solutions, Software Center of Excellence, GE Transportation, GE John F Welch Technology Center, Bengaluru	Industry Applications of Theoretic Computing	31/10/2015
86.	Dr. Vivek Deshpande	MIT College of Engineering, Pune	Wireless Sensor Networks	29/10/2015 to 31/10/2015

Sl. No.	Name of the speaker	Affiliation	Topic of the talk	Date
87.	Dr. Pethuru Raj	IBM India Ltd., Bengaluru	Cloud computing and Big data	29/10/2015 to 31/10/2015
88.	Mrs. Revathy Padmanabhan	TCS, Bengaluru	Big data Analytics	30/10/2015
89.	Sri.Basavaraj Kadaramandalgi	Deputy Director, Regional Forensic Science Laboratory-Davangere	Key note on Forensic Science & Applications	18/1/2016
90.	Dr. Linge Gowda	Senior Scientist, Regional Forensic Science Laboratory, Doddabathi	Introduction to Forensic Biology and Its Applications	22/1/2016
91.	Dr. Harish Prashanth,	Dept. of Meat and Marine Sciences, CFTRI, Mysore	Food Industry-Intervention of Biotechnology towards Green Economy	23/01/2016
92.	Mr.Sachin Tambre	Alumnus of the Mechanical Engineering	Cyber Security	25/2/2016
93.	Mr. Krishna Alapati	Centre Head , Pune CADD Centre	Emerging Trends in Mechanical Engineering	25/2/2016
94.	Prof. K.R. Srinivasan	Chairman, Engineering sciences, JNCASR, Bangalore	Aerodynamics of Bird and Insect Flight	27/2/2016.
95.	Dr. S B Rudraswamy	Professor, SJCE, Mysore	Nano-electronics & Fabrication Process in Sensor Applications	28/2/2016
96.	Mr.Balagi	Art of living	Personality development talk	1/3/2016
97.	Ms. Poonam Aivalli	Traing Officer-Corporate Traing, Nettur Technical Training Foundation	Training Programmes by NTTF.	12/3/2016
98.	Dr. Kumarswamy	Prof. & Head, Dept of E&CE, SIT, Tumkur	Challenges in Speech Processing	30/3/2016
99.	Shankar anand	Mysore paper mills. Ltd., Bhadravathi	New technologies in paper making and opportunities for chemical engineers	31/3/2016
100	Mr. Ashok Sanmani	An employee of Tech-Mahindra	Opportunities in the Aerospace Industry.	28/4/2016
101	Mrs.Shama Sultana R Khan	Asst. Engineer, Instrumentation & Control, KPCL, Bengaluru	Role of Instrumentation in Power Plant	3/5/2016
102	Mr. Gourishankar Karoshi,	Entrepreneur	Alumnus of 2010 batch	11/5/2016
103	Dr. Usha Batra	Associate Professor and HoD-CSE at GD Goenka University, Gurgaon, India.	Cloud Computing and Big data Analytics	31/10/2016
104	Dr. Farzad Safaei	University of Wallongaon, Australia	Wireless Sensor Networks	31/10/2016

3.7.5 How many of the linkages/collaborations have actually resulted in formal MoUs and agreements? List out the activities and beneficiaries and cite examples (if any) of the established linkages that enhanced and/or facilitated

a) **Curriculum development/enrichment**
b) **Internship/ On-the-job training**
c) **Summer placement**
d) **Faculty exchange and professional development**
e) **Research**

f) **Consultancy**
g) **Extension**
h) **Publication**
i) **Student Placement**
j) **Twinning programmes**
k) **Introduction of new courses**
l) **Student exchange**

The formal and informal collaborative relationships have been of immense help to BIET in building fruitful relationships for the benefit of the students and institution in general.
Some of these activities and their benefits are as follows.

a) Curriculum development/enrichment : The faculty have actively contributed to the development of curriculum in Visvesvaraya Technological University, Balagavi, Davangere University, Mysore University and Kuvempu University etc. Similarly, faculty members have contributed to curriculum development in autonomous Engineering such as R V Institute of Technology, Siddaganga Institute of Technology, Tumkur. Interactions with industry, institutions and the service sector have enabled BIET to identify inadequacies in the syllabus. Their feedback has been taken into consideration, and suitable suggestions are communicated to VTU, Belagavi for needful changes.

b) Internship/On-the-job training : BIET has been proactive in using its linkages/MoUs for the benefit of its student community. Number of students have used the research facilities at Indian Institute of Science, ISRO, BEL, NAL, University of Agriculture Sciences, Institute of Excellence, Mysore University Mysore, etc.

c) Summer placement: Number of students have been selected for summer vacation project training at Novozymes, Bhat biotech, Bosch Mico, Bangalore, Zindal Toranagallu. More details are available in **Annexure C-4.**

d) Faculty exchange and professional development: At present there is no faculty exchange programme existing. However many faculty from various departments have been deputed to FDPs and STTPs as a part of professional development.

e) Research
The collaborative activities with many institues have been one of the biggest boons for research activities in the institutions. Many faculties have been using the expertise and facilities available at IISc. Faculty have been acknowledging the collaborator and institution during publication.

f) Consultancy
Faculties have extended their consultancy expertise for the following:
Setting up of research laboratories
Designing laboratories in educational institutions
Consultancy for designing and training in vermicomposting
Product development
Material testing

g) Publication
The institutional association with various institutions has directly augmented research publications.

h) Student Placement: Details for the last four years are available in **Annexure C-5.**

i) Twinning programmes
The Institute does not have twinning programs.

j) **Introduction of new courses:.** M.Tech in Structures is introduced in Civil Engg. Department in the year 2015.

k) **Student exchange**

Being affiliated to VTU, the college has MoU with Oklahoma State University for exchange progamme. So far no students have come forward to undergo this program. However, BIET has encouraged students to go one exchange program, visit institutions and industries of high repute through conferences, extension activities and participation in a number of discussions to enhance learning.

3.7.6 Detail on the systemic efforts of the institution in planning, establishing and implementing the initiatives of the linkages/collaborations.

The inquiry-centered, independent learning in a research environment is at the heart of the student experience in BIET. Departments are given the freedom to have MoUs and collaborations with outside agencies depending on their needs, and maximum financial support have been extended from institute management. The RAC plays an active role in this regard. This has resulted in many MoUs (details are given in Criterion-III section 3.7.2). It is important to note that some of the world class institutions such as Oklahoma State University, Indian Institute of Science, BEL, Madhura garments, IBM, EMC^2, IESA, Jawaharlal Centre for Advanced Scientific Research, University of Agriculture Sciences, Dharwad Ganga Gen Biotechnology, Biozeen, and Aisles Technologies have been extending support to many activities of the institution.

Any other relevant information regarding Research, Consultancy and Extension which the college would like to include.

India is one of the big scientific and technical manpower country in the world, and considers this as an opportunity to drive the country towards becoming one of the technologically powerful countries in the world. It is possible to achieve this goal only if the youth of the country are scientifically and technically empowered through a well-planned holistic system of education to make them competent, confident and independent. The institution's healthy research environment has actively engaged students in more meaningful learning, encouraging them to pursue new knowledge and instilled the ability to handle personal and professional skills that are integral to develop a knowledge-based society. Through a whole variety of extension activities as core ingredients of institutional culture and strategy, BIET has made significant strides in providing a holistic learning experience coupled with host of other programs to its students.

The following are some of the systemic efforts of the institution in planning, establishing and implementing the initiatives:

Inviting eminent subject experts, scientists and entrepreneurs for various activities like workshops, conferences, expert lectures and other deliberations.

Upgrading the existing facilities of the research.

Collaborating with industries for research work through MOUs.

Harnessing talents among the faculty members.

Identifying emerging areas and possible funding agencies.

Visits to various Industries with students accompanied by teachers every year.

CRITERION -IV

INFRASTRUCTURE AND LEARNING RESOURCES

CRITERION IV
INFRASTRUCTURE AND LEARNING RESOURCES

4.1 Physical Facilities

4.1.1 What is the policy of the Institution for creation and enhancement of infrastructure that facilitate effective teaching and learning?

BIET believes in a broad based education and believes in providing state of art infrastructure facilities to achieve excellence in academics and research.

Policy of the institution for creation and enhancement of institute's infrastructure facilities is in line with the objectives laid down by the Governing body.

Creation of infrastructure is as per AICTE norms; additional infrastructure facilities are created based on changes in the curriculum, introduction of new courses and research requirements.

Encourage of staff members to use ICT.

Effective Industry-Institute interaction.

4.1.2 Detail the facilities available for

a) Curricular and co-curricular activities – classrooms, technology enabled learning spaces, seminar halls, tutorial spaces, laboratories, botanical garden, Animal house, specialized facilities and equipment for teaching, learning and research etc.

b) Extra –curricular activities – sports, outdoor and indoor games, gymnasium, auditorium, NSS, NCC, cultural activities, Public speaking, communication skills development, yoga, health and hygiene etc.

The details of the class rooms available in the institute are available in Table 4.1

Table 4.1

Department	No of Class rooms	Labs	Seminar Halls	Drawing Rooms	Dept. Library
Bio Technology	03	05	01	------	01
Bio Medical Engineering	03	03	01	------	01
Civil Engineering	08	06	01	01	01
Computer Science and Engg.	07	08	01	------	01
Chemical Engg.	03	08	------	01	01
Electronics and Communication	06	07	01	------	01
Electronics and Instrumentation Engg.	03	04	01	------	01
Electrical and Electronics Engg.	08	09	01	------	01
Information Science and Engg.	06	05	01	------	01
Mechanical Engineering	09	14	01	------	01
Textile Technology	03	06	------	------	01
Physics	03	03	-------	------	01
Chemistry	05	07	-------	------	01

Specialized facilities and equipment for teaching, learning and research

- LCD projectors are fixed in every seminar hall for presentation and apart from that, every department has one or two LCD projectors to facilitate Audio visual presentations during teaching.
- Every seminar hall also equipped with audio, video facility and internet facility for video conferences and webinars.

b) Sports, outdoor and indoor games, gymnasium:

- Students are encouraged to participate in outdoor and indoor games. Spacious cricket ground, football ground, Basket ball and Tennis courts are available within the campus.
- Facilities for indoor games such as shuttle badminton, table tennis, chess, carom etc, for both boys and girls are available.
- 12 station Multi Gym (2 sets) state of art facility is also available in the campus.
- Every department has its own sports activity conducted annually for the entire college. The details of these inter-departmental sports activities are given in Table 4.2.

Table 4.2

Sl. No.	Department	Activity
1	E & C	'NB-Cup' -interdepartmental cricket tournament
2	CS & E	'BPL 20-20' -cricket tournament
3	IS & E	Interdepartmental 'Pro-Kabbaddi' tournament
4	Mechanical	Interdepartmental football tournament
5	Bio-Medical	Interdepartmental shuttle badminton tournament
6	Electronics and Instrumentation	'Chaduranga'- an interdepartmental chess competition

- BIET has conducted VTU Mysore Zone men cricket team selection trials on 28th and 29th September 2015.
- BIET has conducted VTU Inter Zone men Cricket team selection trials from 7th to 9th October 2015.
- Our students have won many competitions at university level.

The details are available in **Annexure G-1.**

Indoor- Shuttle Court

Cricket ground

Gymnasium

Football Ground

Table Tennis

Annual Sports Day 2016

Science Forum:

Science Forum is a platform for conducting various activities for first year students. Under this forum National Science day, Constitution day, Teachers' day are celebrated every year.

National Science Day 2016

Constitution Day 26/11/2015

Technology Barrier Reduction Programme 2016 Constitution Day 26/11/2016

Auditorium:

An auditorium is being built with a seating capacity of 700 and equipped with stage, public address system, LCD projector, and internet and Wi-Fi facilities. The auditorium is fully air conditioned.

Auditorium (under construction)

NSS, NCC and Youth Red Cross Wing:

- The institution has NSS unit, with Prof. T. K. Krishnakumar of Dept. of Physics, as the coordinator. NSS unit conducts activities such as Blood donation camp and Environmental awareness programs.
- NSS volunteers organized and actively served as volunteers in the unique program for rural high school students - Technology Barrier Reduction Program-2016, organized by Foundation for Advancement for Education and Research (FAER) and Zebra Technologies, Bengaluru, in association with Bapuji Institute of Engineering and Technology, ISTE, YRCW from 18-04-2016 to 06-05-2016 (21 days) to expose them to current technology trends.
- Institute has BIET-NCC unit for which Lt. Anjaneya L. H. is the coordinator. It is the Army-Engineers wing of NCC and has very close association with the armed forces. The enrolled strength for NCC this year is 68. All second year cadets (14) have undergone training at army attachment camp at MEG Bengaluru and Kondajji RD camp.
  This year our student Samanth Sudhakar Shetty is selected for Indian armed forces through NCC quota.
- The institution has Youth Red Cross Wing (YRCW) with Prof. Chandrashekhar S. M. as the coordinator. YRCW conducts activities such as Blood donation camp, stroke rehabilitation awareness camp, blood group testing camp and health awareness programs.

NCC students along with Dr. A.P.J. Abdul Kalam, former President of India, during his visit to Institution.

NSS Activities

Blood donation camp

Stroke Rehabilitation

Invited Talk on World Health Day

Blood Group Testing Camp

Cultural activities.

- An Inter collegiate cultural fest "DAVANA" is celebrated every year to showcase the cultural talents of the students. This fest attracts participants from institutions across Karnataka. It includes 24 cultural competitions ranging from dance, music, theater, literary to fine arts.
- "Fashion Fiesta and Dance Carnival", an inter college fashion competition, is organized every year to explore the hidden talents of students.
- Every year students are participating in VTU youth fest organized by VTU and have been winning several prizes.
- **BIET organized VTU youth fest twice, 6th VTU fest in the year 2004 and 14th VTU fest in 2014. Nearly 4000 students from over 100 Engineering colleges of Karnataka attended the festival and participated in a host of cultural activities.**
- Every year Institute organizes Ethnic day. Students of BIET come with different cultural dresses and exhibit different traditions of India.

Inaugural function of 6th VTU Youth Fest held at BIET

Ethnic Day Celebration

Public speaking and Communication skill development.

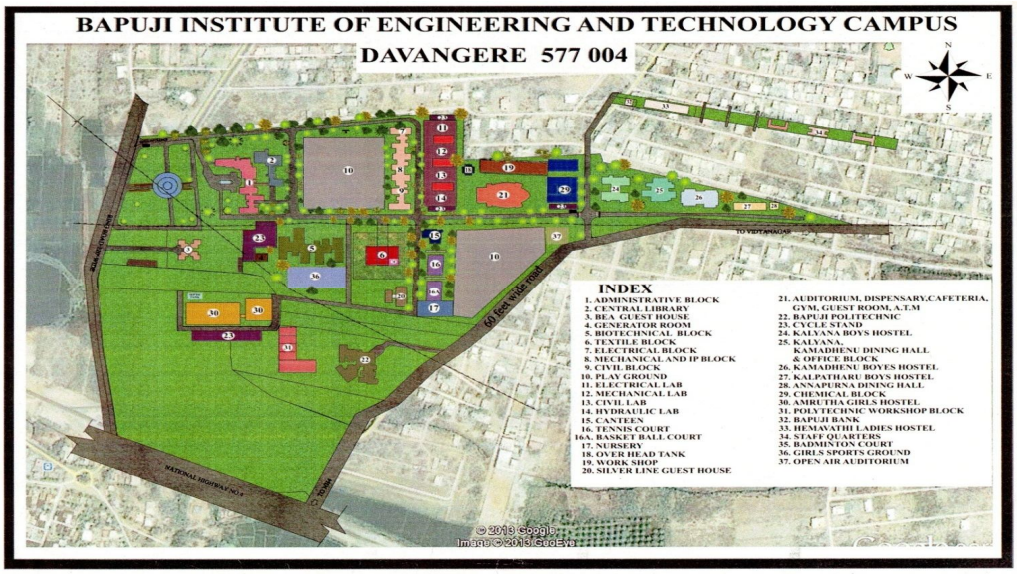
- Communication skill development training programs are being regularly conducted by Training and Placement cell in the institution for the benefit of the students.
- In the institution, every department has its own forum. Under the banner of department forum, department regularly conducts quiz and debate competitions. This helps students to improve their communication skills.
- Students are encouraged to perform the tasks like Master of ceremony, welcome speech, vote of thanks etc. to improve public speaking ability.
- Students are encouraged to participate in conferences and seminars enabling them to present technical papers.

Yoga, health and hygiene.

Yoga day is celebrated every year on 21st June. Professional doctors are invited to create awareness about health and hygiene. Yoga camps are also conducted for students.

4.1.3 How does the institution plan and ensure that the available infrastructure is in line with its academic growth and is optimally utilized? Give specific examples of the facilities developed/augmented and the amount spent during the last four years (Enclose the Master Plan of the Institution / campus and indicate the existing physical infrastructure and the future planned expansions if any).

The institute has a policy of establishing the required infrastructural facilities as per AICTE and VTU norms to facilitate effective teaching and learning. The institute has made provision to create extra infrastructural facilities to meet the changes in the curriculum, student strength and introduction of new courses.



Master plan

The various infrastructural facilities which are being planned and developed are as follows:

Establish the physical facilities like buildings with class rooms, laboratories, seminar halls, staff rooms, R&D centers, rest rooms etc. All these facilities are constructed as per AICTE norms with lot of light, ventilation and extra space for free movement of the students. Further, provision is made in each building for its vertical growth.

Laboratory equipments, devices, computers and related software are procured in a systematic way and upgraded based on the changing curriculum and intake.

Strengthen the library to cater to the needs of students and staff. Policy of the institution is that the library should have spacious lending section, reference section for journals in print form, reference section for E-Journals and E-Books, News paper and general periodical section and reprographic section.

Wi-Fi infrastructural facility is being strengthened every year. OFC underground cables are laid to act as backbone and also to increase the efficiency of the connectivity by upgrading 14 Mbps Railtel to 25 Mbps Airtel.

The campus is designed and landscaped in such a way that the campus is full of trees with well maintained gardens, vehicle parking space, solar street lights, solar hot water system etc.

HODs are entrusted with the responsibility of preparing the budget of their department taking into account all the requirements. The budget is prepared in consultation with principal. The budget prepared is sent to the governing body of the college for approval. Once the budget is approved, the procurement of equipment/consumables will be initiated through purchase section. The department heads will take up the responsibility of calling for quotations, preparation of comparative statements and finalizing the order for purchase.

Major building Construction work taken up during the last four years is given in Table 4.3

Table 4.3

Sl. No.	Name of the Block/Construction	Cost of Work, Rs
1	Amrutha: Girls Hostel	1,07,44,891=00
2	III floor of Civil and Electrical block, III and IV floor of Mechanical block.	1,41,87,193=00
3	Auditorium – under construction	12,30,74,388=00

Future plans:

- Build Post Graduation block, Swimming pool, and additional hostel blocks for boys and girls.
- A total solution for water harvesting system, Green campus, and solar power harnessing.
- Skill development wing / Finishing school
- BIET has applied for incubation centre under Government of Karnataka 'New Age Incubation Network (NAIN)',
- Department of Mechanical and Biotechnology have also applied for skill development centre through "Atal Innovation centre".

4.1.4 How does the institution ensure that the infrastructure facilities meet the requirements of students with physical disabilities?

- Institute follows government policies for the physically challenged students during their study period in the college.
- The college has provided ramps and wheel chair facility for the benefit of students with physical disabilities.
- Administrative block and CME block have been provided with lift facility for the benefit of students with physical disabilities.
- Further, special arrangements are made at the time of tests and examinations to enable them to perform better.

4.1.5 Give details on the residential facility and various provisions available within them:

Hostel Facility – Accommodation available

Institute has separate in-campus and off-campus hostel blocks for boys and girls.

The Boys Hostel:

- BIET boys' hostel, off-campus (nearby), was founded in 1979 to accommodate the boys from different parts of the country.
- The hostel now has three blocks and the hostel area is around 4.5 acres with a built up area of 12880 sq.m. There are 200 rooms accommodating 608 students.
- The hostel is having two dining halls serving north & south Indian food to cater the needs of the boarders.
- The rooms are well furnished and the hostel has lush green and pleasant surroundings. Stationery shop and internet facility are provided in the hostel.
- Ragging is totally prohibited in the hostel. Surveillance cameras are installed in the hostel blocks for the safety and security of the students.
- Round the clock security.
- Solar hot water facility is also available. All hostel blocks are provided with water purifiers.
- Power back up is available to give uninterrupted power supply to the hostel.
- The hostel has indoor shuttle court and an indoor sports hall used for table tennis, chess, carom board and other indoor games. Sports competitions are held regularly to encourage the students to participate in non-curricular activities.
- All the national festivals are celebrated in the hostel. The boarders actively participate in the national functions, fresher's day and fare well function which are held regularly every year.

The Girls' Hostel:

"Amrutha" Ladies Hostel, in-Campus, started in 2008 accommodates girl students from different parts of the country.

- The hostel has one block with four floors and has a built up area of 6500 sq.m. with 100 rooms accommodating 300 boarders.
- The rooms are well furnished and the hostel has lush green and pleasant surroundings.
- The hostel is having two dining halls to cater to the needs of the boarders for their varied taste. Both north Indian & south Indian dishes are prepared in the hostel mess.
- Ragging is totally prohibited in the hostel.
- The hostel has indoor shuttle court, and an indoor sports hall which is used for table tennis, chess, carom board and other indoor games. Sports competitions are held regularly to encourage the students to participate in non-curricular activities.
- For the benefit of the boarders, a stationery shop is established in the hostel premises. A track for walking is also laid all around the hostel.
- All the national festivals are celebrated in the hostel. The boarders actively participate in the national functions, freshers' day and fare well function which are held regularly every year.
- "Hemavathi" Ladies Hostel, off-campus (nearby), is also being utilized to accommodate around 150 boarders of our college in 50 rooms in one of the blocks of the hostel.

Kamadhenu Block

Kalpataru Block

Hostel Office Block

Cooking Facilities

PCO /STD Facilities

Solar water heating

On campus girls' hostel

Dining Hall

Room Interior

Off Campus Hostel Blocks for Girls

All hostels are known for discipline and well managed by dedicated faculty and staff members. Each hostel mess is managed by the hostel administration.

Recreational facilities, gymnasium, yoga center, etc

Institute has indoor games facility like chess, carom and table tennis etc. Facilities for outdoor games like cricket, volley ball, basket ball, football, throw ball, Kabaddi, Kho-kho are available. Gym facility is also available in the campus. Yoga classes are arranged from the experts to the boarders to keep up their health in good condition. Interested boarders will make use of these facilities.

Hostel Gymnasium

Facilities for Indoor Games at boys Hostel - Ekalavya

Computer facility including access to internet in hostel

BIET Boys Hostel and "AMRUTHA" Ladies Hostel are provided with internet facility. Boarders can make use of this facility with permission.

Facilities for medical emergencies:
Medical facilities are also available in the institution. First aid boxes with emergency medicines are also made available in the hostels. Institute provides medical assistance to needy students. A part time doctor is appointed who visits the hostel to take care of the health and medical needs of the hostel students. Ambulance facility on request is available.

Health Centre

Internet and Wi-Fi facility
In HEMAVATHI Ladies Hostel, off-Campus, Wi-Fi internet connectivity facility is made available round the clock. Shortly Wi-Fi internet connectivity facility will be introduced in campus hostels also.

Recreational facility-common room with audio-visual equipment
Some periodicals, magazines, newspapers are available for the students in the hostel apart from entertainment facilities like cable/dish TV.

Available residential facility for the staff and occupancy.
Limited Staff quarters are made available (nearby about 2km from the college) with all facilities. 2 staff members are utilizing this facility.

Constant supply of safe drinking water:
The institution provides pure drinking water for all the students, faculty and staff. All departments of the college, hostel blocks and staff quarters are provided with water purifiers for the supply of safe drinking water round the clock. Both ground water as well as corporation supply is being utilized for campus water requirements.

4.1.6 What are the provisions made available to students and staff in terms of health care on the campus and off the campus?

- Institute provides medical assistance to needy students. A doctor visits the campus on a regular basis.
- First aid kit is available in all the laboratories.
- Bapuji Educational Association (BEA) has TWO medical colleges and TWO dental colleges in Davangere. Since B.I.E.T is a constituent college of BEA, for any health issues of students or faculty, those colleges will provide required medical facility.
- Health care funds for students.
- Employees' welfare fund.

4.1.7 Give details of the Common Facilities available on the campus– spaces for special units like IQAC, Grievance Redressal unit, Women's Cell, Counselling and Career Guidance, Placement Unit, Health Centre, Canteen, recreational spaces for staff and students, safe drinking water facility, auditorium, etc.

The location of special units of the institute is given in Table 4.4.

Table 4.4

Sl. No.	Description	Faculty	Location
1	Training and Placement	Dr. Poornima B.	Mechanical Dept.
2	Women's Cell	Prof. M.E. Ashalatha	IS Department Building
3	Grievance Redressal Unit	Dr.K.S.Basavarajappa	Mathematics Dept.
4	IQAC	Dr. K. Murugesh Babu	Textile Dept.
5	Examination cell	Dr. Kumarappa S.	Board Room
6	NSS	Prof. Krishnakumar T.K.	Physics Dept.
7	Youth red cross	Prof.Chandra Shekhar S. M.	Textile Dept.
8	Alumni relations cell	Dr. Devendrappa K. C.	Mechanical Dept.
9	Society	Prof. S.B.Patil	Canteen Building

IQAC (Internal Quality Assurance Cell).

Institute has constituted IQAC committee and its details are shown below.

Sl. No.	Name	Designation
1	Dr.S. Subrahmanya Swamy	Principal
2	Prof. Y.Vrushabhendrappa	Director
3	Dr. H.B. Aravind	Prof. & HOD of Civil
4	Dr. B.E.Rangaswamy	Prof. & HOD of Biotechnology
5	**Dr. K. Murugesh Babu (convener)**	Prof. & HOD of Textile
6	Dr. Kumarappa S	Prof. & HOD of Mechanical
7	Dr. Poornima B	Prof. & HOD of IS&E
8	Dr. Sadashivappa K	Prof. in Mechanical
9	Dr. C.R. Nirmala	Prof. & HOD of CS&E

Grievance Redressal unit.

Details are available in **Annexure E-1.**

- Students/their parents can approach any member of the committee for redressal of their grievances.
- The Grievance Redressal Cell addresses grievances regarding the academic and other matters like hostel, canteen problems.

Women's Cell.

There is a women's welfare committee set up to address harassment to girl students and women employees. This committee is established as per the guidelines of Government of Karnataka and VTU. Womens' cell details are available in **Annexure E-2.**

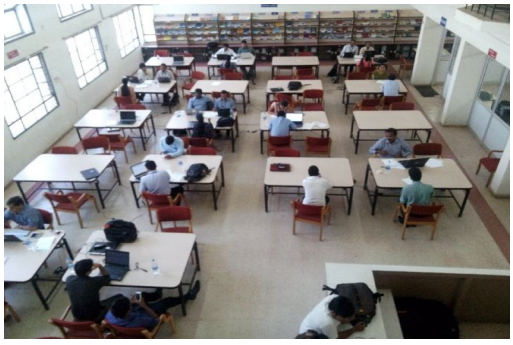
- To receive and act upon any complaint of sexual harassment by any category of staff, students or outsiders.
- To ensure women friendly work environment and atmosphere in the institution by providing adequate space like women's rest room etc., to handle women specific issues.
- The committee meets periodically to review cases if any. CCTV cameras are installed in strategic areas to ensure the safety of the girl students.
- Two girls' hostel blocks are available in the campus which can accommodate about 340 students. The hostel blocks are provided with round the clock security with residential wardens.
- No specific complaints have been received so far.

Counseling.

- In every department, for every fifteen students, one faculty will be allocated as counselor to counsel the students in a systematic way.
- Counselor maintains a progress report of each student. Progress report contains all personal, academic, curricular and other details of the student. Information about the student progress is sent to the parents/guardians regularly through post, SMS and E-mails.

Career Guidance and Placement Unit.

- Institution has a separate placement cell with chamber for Dean training and placement, seminar hall, board room, lab to conduct online tests and facilities to conduct face to face interviews by recruitment teams of various companies.
- Placement cell imparts placement related training to enable the students to mould their career. For this it has tie up with Focus Academy for Career Enhancement (FACE), Innovations Unlimited, Seventh Sense and others.



TCS Selection Process

Campus Mock Test & Quiz

BEL Selected Students

TCS Selected students 2015-16

Health Centre.

- A separate health center is provided within the campus.
- A doctor visits the campus on a regular basis and if need arises, doctor attends to the students during emergency

Canteen, Recreational spaces for staff and students.

- A full fledged canteen, a recreational center and one coffee shop are operating within the campus catering needs of students and staffs.
- An indoor stadium for chess, carom, shuttle badminton and table tennis is available.

Canteen

Safe drinking water facility.

In every department, hostels and administrative office, RO filters are provided to cater to safe drinking water requirement.

Auditorium.

An auditorium is being constructed with a seating capacity of 700 having podium, public address system, LCD projector, internet and Wi-Fi facilities. The auditorium will be air conditioned with all modern gadgets for conducting programs.

A fully furnished auditorium of 300 seating capacity is coming up under Training and Development wing.

Other facilities

- Institution has cooperative society within the campus.
- Institution has Bapuji cooperative bank to provide banking facility for students and staff.

- Axis bank ATM facility is available near the institute.

Cooperative Society: Stationery

Bank

4.2 Library as a Learning Resource

The Library & Information Centre housed in the administrative block is having three floors including two mezzanine floors, with an area of 2661sq.m. Librarian and 12 supporting staff are working in the library. The seating capacity of the Library is for 600 users at a time. To cater to the needs of the staff/ students, to have easy and speedy access to the library collection, the house keeping operations of library have been automated using EasyLib software package. It has adapted open access system and maintains Online Public Access catalogue (OPAC) to provide easy access to the stacks. The library subscribes to 142 print journals and e-journals through VTU-Consortium subscription. It also has a collection of nearly 3775 back volumes of periodicals.
Library is an essential part of every institution which helps staff and students to enhance their knowledge through various resources such as books, newspapers, journals, magazines and electronic library. Institution library provides borrowing, book bank, OPAC, reference services, digital library with high speed internet facilities, reprographic, Wi-Fi, etc.

In addition to the general library, engineering departments have exclusive department libraries also for quick and easy access of books by staff and students.

4.2.1 Does the library have an Advisory Committee? Specify the composition of such a committee. What significant initiatives have been implemented by the committee to render the library, student/user friendly?

Books required will be indented through the heads of the department; based on the strength, number of copies will be added with the consent of the Principal.

The institute has a library advisory committee which strives for the development and improvement of the learning facilities through the library. List of the members of library advisory committee is given in Table 4.5

Table 4.5

Sl. No.	Name	Designation
1	Prof. Y. Vrushabhendrappa	Director
2	Dr. S. Subrahmanya swamy	Principal
3	Dr. Sadashivappa .K.	Dean Academic
4	Dr. Rangaswamy B. E.	Dean R&D/ HOD BT
5	Dr. H.B. Aravinda	Dean-Student affairs
6	Dr. Sunitha G. S.	HOD- E& C
7	Dr. Nirmala C. R.	HOD -CS &E
8	Dr. K. S. Basavarajappa	HOD- Mathematics
9	Prof. Jayadevappa B.M.	HOD- E&I/Library coordinator
10	**Dr. K.V. Manjunatha (Convener)**	**Librarian**

The Library advisory committee looks into the following activities:

The library advisory committee advises for the up-gradation of library facilities, addition of books, journals, e-resources every year keeping pace with the changes in syllabus and guidelines of university and AICTE.

Committee advises for the smooth conduction of library activities and to provide good service to students and staff.

Books required will be indented through the HOD of the department; based on the strength, number of copies will be added with the consent of the Principal.

4.2.2 Provide details of the following:

Total area of the library (in sq. m.) **:** 2661 sq.m.

Total seating capacity **:** 564

- Reading Room: 96
- Library: reference/borrowing/back volume/project report: 428
- Book Bank : 40

Working hours

	Borrowing	Reference
Monday to Friday	09:00 am-01:00 pm 02:30 pm – 5:30 pm	09:00 am-09:00 pm
Saturday	09:00 am-01:30 pm	
Sunday, Holidays	*********	09:00 am-01:00 pm (During Examination: 09:00 am to 9:00 pm)

Layout of the library (individual reading carrels, lounge area for browsing and relaxed reading, IT zone for accessing e-resources)

Ground Floor

- Self Reading Section: To read their own books, notes etc.
- Server Room.
- Books acquisition, Technical Processing, Preparation ID Card, Spiral binding etc.
- Librarian, Assistant Librarian /Office Rooms.
- Reprographic Room.
- Circulation Desk.
- Digital Library.

- Reference Section.
- Current periodical Display.
- News paper / Magazine section.

Mezzanine Floor

- PG reference section.
- General reading.

Second Floor

- Borrowing section.
- Social welfare book bank section.

Features

- SC / ST students get 5 text books at the beginning of the semester.
- Books are to be returned after the end of the semester examination.
- These books will be over and above the regular library books.
  - Back Volumes Section.
  - Project Report section.
  - Cyclostyles.
  - UPS Room.
  - Store Room.

Third Floor

General book bank section

Features

- Students get 5 text books at the beginning of the semester.
- Books are to be returned after the end of the semester examination.
- These books will be over and above the regular library books

Reference Section

Borrowing Section

Back Volumes

Periodical Section

Computerized Circulation

Self Reading room

Reprography

Digital Library

4.2.3 How does the library ensure purchase and use of current titles, print and e-journals and other reading materials? Specify the amount spent on procuring new books, journals and e-resources during the last four years

Based on the recommendations of staff members, heads of department send a requisition to library through Principal for the purchase of books/ journals and other materials. The librarian keeps track of the purchase order and ensures that the supply is on time. After acquisition of the books and journals, accession, computerization, automation and classification of books are done as per Dewey Decimal Classification (DDC) and placed in the appropriate racks for reference and issue.
Library advisor committee ensures purchase of books, journals etc. based on the requisition.

Type of Classification:

Dewey Decimal Classification

How many computers connected to LAN? : **23**

Federated search: Knimbus

The amount spent on procuring new books, journals and e-resources during the last four years is given in Table 4.6

Table 4.6

Holdings	Year -1 (2012-13)		Year – 2 (2013-14)		Year – 3 (2014-15)		Year – 4 (2015-16)	
	Nos.	Total Cost (Rs.)	Nos.	Total Cost (Rs.)	Nos.	Total Cost (Rs.)	Nos.	Total Cost (Rs.)
Text Books /reference books	5445	18,20586.6	9308	37,25898.49	8549	35,78762.15	6892	3056981.00
Journals/ Periodicals	135	2,38215.00	133	2,55974.00	136	2,88466.00	142	3,28166.00
e-resources	420	6,95299.00	720	8,44026.00	436	8,79970.00	1811+	12,09000.00
Any other (specify)	--	--	--	--	--	--	--	--
Total amount	**---**	**27,54101.6**	**----**	**38,35898.49**	**---**	**47,47198.15**	**---**	**45,86244.41**

MBA

Holdings	Year -1 (2012-13)		Year – 2 (2013-14)		Year – 3 (2014-15)		Year – 4 (2015-16)	
	Nos.	Total Cost (Rs.)	Nos.	Total Cost (Rs.)	Nos.	Total Cost (Rs.)	Nos.	Total Cost (Rs.)
Text Books /reference books	362	141362.00	925	25667	2148	194510	258	92345
Journals/ Periodicals	36	47748.00	36	38045	38	48941	38	43590
e-resources	J-Gate, Proquest	246916.00	J-Gate, Proquest	227416			J-Gate, Proquest	225916
Any other (Magzine)		1000.00						7146
Total amount		**437026.00**		**291128**		**243451**		**368997**

4.2.4 Provide details on the ICT and other tools deployed to provide maximum access to the library collection?

OPAC: Available: Using OPAC, user can search the availability of book based on the title, author and accession number.

Electronic Resource Management package for e-journals :

Subscribed through VTU Consortium, the details of e- resources available in the library are:

- IEEE Xplore Digital Library,
- Springer Link,
- Knimbus,
- ASCE Library,
- Taylor and Francis Journals ,
- Proquest Database,
- Science Direct
- Indian Academy of Science

Federated searching tools to search articles in multiple databases: **Yes (Knimbus)**

Library Website: available in college website:

www.bietdvg.edu/Library/info.html

In-house/remote access to e-publications: Available e- publications can be accessed from within the library and also from anywhere within the campus.

Library automation: Using Easy Lib software.

Total number of computers for public access: 16.

Total numbers of printers for public access : No

Internet band width/ speed: 25 mbps leased line

Institutional Repository: Yes, through e-vidya, courses syllabus books, question papers, copies of student project reports, Ph.D. Thesis, Karnataka gazette, conference proceeding etc.

Content management system for e-learning: NPTEL lessons available which can be accessed through internet participation in resource sharing networks/ consortia (like Inflibnet): VTU Consortium – VTU e-learning CD's are available, VTU notes available on VTU website

The library also has surveillance System comprising network of two CCTV.

4.2.5 Provide details on the following items:

Average number of walk-ins : 300/day

Average number of books issued/returned : 200/day

Ratio of library books to students enrolled : 25:1 [(48401+27202+14756) /3500]

Average number of books added during last three years : 9360 (24749+3331/3)

Average number of login to OPAC: 25 to 50 per day

Average number of login to e-resources: e-resources are used throughout the campus.

Average number of e-resources downloaded/printed: user can download or print the data as per their requirement anywhere in the campus: 20/day

Number of information literacy trainings organized: Librarian was sent for training at VTU consortium.
Details of "weeding out" of books and other materials: Old/outdated/damaged books are weeded out periodically and kept separately in the store room.

4.2.6 Give details of the specialized services provided by the library

Manuscripts: Not Available
Reference: There is a reference section with reference and text books prescribed in curriculum
Reprography : Available
Inter Library Loan Service (ILL): Based on the user request.
Information deployment and notification :

- The libraries display important information regarding employment and career opportunities, information about competitive exams on its notice board.
- Contents of current journals are provided to department.
- The information regarding author, title and subject can be deployed through Open Access Catalogue (OPAC)

Download : Available
Printing: Two Dot matrix Printers, one laser printer and one scanner are available in the library
Reading list/ Bibliography compilation: List of new books added to the library is circulated to all the departments.
In-house/remote access to e-resources: Internet facility with 15 computers and also the library is Wi-Fi enabled.
User Orientation and awareness: Students at the entry level are oriented about the facilities, rules and regulations for using library resources.
Assistance in searching Databases: Library personnel will assist users in searching Database.
INFLIBNET/IUC facilities: KNimbus, VTU Consortium.

The details of the journals available in VTU Consortium are given in **Annexure D-2.**

4.2.7 Enumerate on the support provided by the Library staff to the students and teachers of the college.

The library staffs lend support in the following ways to staff and students:

- Providing required information about books, journals and general information from newspapers.
- Searching for books availability using OPAC.
- Identifying and locating the books from the stack.
- Assisting in accessing the online information.
- Assisting in searching and downloading the required articles from the available online database.
- Searching for and downloading papers from e- journals.
- Supporting in photocopying.
- Support for ILL

- Assisting in searching question papers.
- Send information about new books arrivals from various publishers to all departments.
- Request heads of various departments to add new books.
- Maintain hard copies of all news items related to institute covered in various newspapers/ magazines.
- Sends information about new book arrivals from various publishers to all departments.
- Contents of current journals are sent to departments.

4.2.8 What are the special facilities offered by the library to the visually/physically challenged persons? Give details.

The section in charge helps such students to locate books and arrange to issue the same.

4.2.9 Does the library get the feedback from its users? If yes, how is it analyzed and used for improving the library services. (What strategies are deployed by the Library to collect feedback from users? How is the feedback analyzed and used for further improvement of the library services?)

The library activities are improved with the suggestions and feedback from the library users.

- Suggestions during library committee meetings/ department/ college level.
- Feedback from the students.
- Feedback from Visitors.
- Feedback from teachers.

Any important suggestions or improvements suggested will be adopted to improve the overall functioning of the library.

4.3. IT Infrastructure

4.3.1. Give details on the computing facility available (hardware and software) at the institution.

- Number of computers with configuration (provide actual number with exact configuration of each available system).

Details are given in **Annexure F-3.**

Internet Lab

Server & Power Back-up

4.3.2. Detail on the computer and internet facility made available to the faculty and students on the campus and off-campus?

- Institution has 25Mbps Airtel Leased line Internet facility and 2Mbps BSNL Broad Band Internet facility.
- 306 systems are connected with internet, out of which 128 systems for faculty and 178 systems for students.

4.3.3. What are the institutional plans and strategies for deploying and upgrading the IT infrastructure and associated facilities?

- The institution plans for the up gradation in IT infrastructure as per the requirements.
- Institution usually upgrades the PCs for the latest configuration periodically.
- The bandwidth has been increased from 08 Mbps to the present 25 Mbps.
- Encourages purchasing and using industry specific software.
- Use of internet is monitored and user based policy is applied for students and staff.
- Restricted access to the various web sites.
- Planning to have ERP to completely automate student information, administration, library and other activities of the institution. Discussions are on with TCS Ion.

4.3.4. Provide details on the provision made in the annual budget for procurement, upgradation, deployment and maintenance of the computers and their accessories in the institution (Year wise for last four years)

The details are provided in Table 4.7.

Table 4.7

Particulars	Amount in Rupees			
	2012-2013	2013-2014	2014-2015	2015-2016
Computers, Printers	15,00,000.00	15,00,000.00	1,00,00,000.00	80,00,000.00
Consumables	20,00,000.00	20,00,000.00	25,00,000.00	23,00,000.00
Internet	5,00,000.00	8,00,000.00	8,00,000.00	8,00,000.00
Networking	5,00,000.00	5,00,000.00	5,00,000.00	5,00,000.00

4.3.5 How does the institution facilitate extensive use of ICT resources including development and use of computer-aided teaching/ learning materials by its staff and students?

- The institution has adequate computer facility with internet connection for faculty members and students.
- The faculty and students are given access to NPTEL, e-journals and other e-resources available in the digital library.
- Faculty members use LCD projectors available in the departments for effective teaching.
- Virtual lab facility (Simulation, CAD, CAM) being used by the staff and students in the laboratories.
- Online feedback system for students, parents and alumni are available on the college website.
- Online aptitude tests will be conducted by placement cell for campus recruitment.
- Separate language lab facility is available for first year students.
- Institution has VTU recognized EDUSAT center which telecasts lectures by eminent faculty members as per the VTU-EDUSAT time table.
- Institution has e-learning lab facility provided by VTU which helps students to get learning materials.

4.3.6 Elaborate giving suitable examples on how the learning activities and technologies deployed (access to on-line teaching - learning resources, independent learning, ICT enabled classrooms/learning spaces etc.) by the institution place the student at the centre of teaching-learning process and render the role of a facilitator for the teacher.

- The institution has adequate computer facility with internet connection for faculty members so they can prepare course materials easily.
- The faculty and students are given access to NPTEL, EDUSAT and other e-resources available in the library.

4.3.7 Does the Institution avail of the National Knowledge Network connectivity directly or through the affiliating university? If so, what are the services availed of?

- The institute has EDUSAT facility sponsored by VTU and is supported by ISRO.
- The institute has NPTEL videos available for students and staff.
- The institute has VTU recognized e-learning lab through which first year students get study material.
- Institute is a member of VTU consortium for library resources.

4.4 Maintenance of Campus Facilities

4.4.1 How does the institution ensure optimal allocation and utilization of the available financial resources for maintenance and upkeep of the following facilities (substantiate your statements by providing details of budget allocated during last Four years)?

Statement showing the optimal allocation and utilization of the available financial resources for maintenance and upkeep of the following from 1.4.12 to 31.03.16 (four years) is given in Table 4.8.

Table 4.8

Particulars		1-4-2012 to 31-3-2013 (in Rupees)	1-4-2013 to 31-3-2014 (in Rupees)	1-4-2014 to 31-3-2015 (in Rupees)	1-4-2015 to 31-3-2016 (in Rupees)
Building	Maintenance of Building	676,592.00	650,387.00	1,773,856.00	1,700,992.00
	Maintenance of Ladies Hostel Building	90,522.00	--	380,232.00	--
	Maintenance of Cycle Stand	133,915.00	--	--	42,793.00
	Maintenance of Roads	428,947.00	407,760.00	219,243.00	738,350.00
	Maintenance of Elevator	19,101.00	18,261.00	--	64,748.00
	Maintenance of Garden	327,658.00	183,289.00	107,139.00	869,191.00
Furniture	Maintenance of Furnitures	11,444.00	16,623.00	42,701.00	29,904.00
Equipments	Maintenance of Equipments	179,850.00	70,027.00	174,809.00	214,894.00
	Maintenance of Workshop & Lab	51,122.00	79,566.00	379,611.00	129,745.00
Computers	Maintenance of Computers	343,579.00	307,896.00	144,697.00	52,665.00
	Network	172,144.00	70,242.00	67,783.00	27,942.00
	Internet Charges	554,721.00	467,250.00	617,746.00	464,311.00
	Maintenance of Software	--	500.00	7,500.00	11,350.00
	Maintenance of UPS	198,981.00	225,222.00	154,256.00	744,585.00
	Maintenance of EPBAX	15,092.00	2,500.00	2,950.00	78,784.00
	Maintenance of AC	160,273.00	258,622.00	188,886.00	294,714.00
Vehicles	Maintenance of Vehicles	552,938.00	685,227.00	875,530.00	444,246.00
Any other	Maintenance of Library Books	43,610.00	19,562.00	--	--
	Maintenance of Sports Play Ground	46,174.00	142,301.00	44,296.00	129,253.00
	Maintenance of (Water Cooler) R.O Units	41,270.00	41,720.00	22,331.00	57,940.00
	Maintenance of Well & Borewell	--	187,539.00	18,763.00	29,060.00
	Maintenance of Xerox Machines	124,906.00	86,509.00	139,646.00	128,289.00
	Maintenance of Generator	916,430.00	820,484.00	832,436.00	1,085,052.00
	Maintenance of Electrical Fittings	211,509.00	109,681.00	276,590.00	177,922.00
	Power Generation Tax (E&E Insp)	--	--	--	5,728.00
	Grand Total	**53,00,778.00**	**48,51,168.00**	**64,71,001.00**	**75,22,458.00**

Some percentage of the total revenue is earmarked for maintenance of campus facility.

Annual Maintenance contract for UPS/generator computers etc.

Networking maintenance

Telecom maintenance

Periodic calibration of laboratory equipment by the instructors of concerned laboratories.

4.4.2 What are the institutional mechanisms for maintenance and upkeep of the infrastructure, facilities and equipment of the college?

The institution has separate maintenance sections for maintaining buildings, equipments, plumbing, carpentry, electrical, computers, vehicles, housekeeping, CCTV system, etc.

Instruments and equipments in the laboratories are maintained by the respective departments.

Computers, printers and other peripherals are generally maintained by the respective department technical staffs and also outsource maintenance people.

Department heads report to the Principal about any maintenance required for infrastructure of their respective departments. A separate maintenance department headed by a civil engineer and two helpers will attend the institution maintenance and upkeep of minor civil works. Specialized workers also hired for the repair, construction and maintenance.

Whitewash and painting of the building is done periodically. The quality of work carried out is inspected and certified prior to the clearance of the bills.

A group of gardeners looks after the garden in cleaning, watering, de-weeding, maintenance, lawns and horticultural equipment and record keeping.

The electricians ensure timely serving of diesel generator sets, as per the manual supplied by the manufacturer. The college building, toilets are periodically maintained by the concerned staff, with de odorants, like phenyl and keep them in hygienic condition.

The college vehicles are periodically checked and maintained by an outside automobile agency.

In addition the maintenance of the areas of hostels, canteen etc. is also undertaken. Hostel wardens for boys and girls are deployed respectively for monitoring and functioning of the hostels along with the supporting staffs and student representatives. Inspection is done by the Chairman/Director/ Principal in keeping the hostels clean, hygienic and inspecting the quality of food.

Feedback is taken from faculty, non teaching staff and students about maintenance.

The same is conveyed to the Principal (Figure 4.1).

Maintenance Engineer will address those works on a priority basis

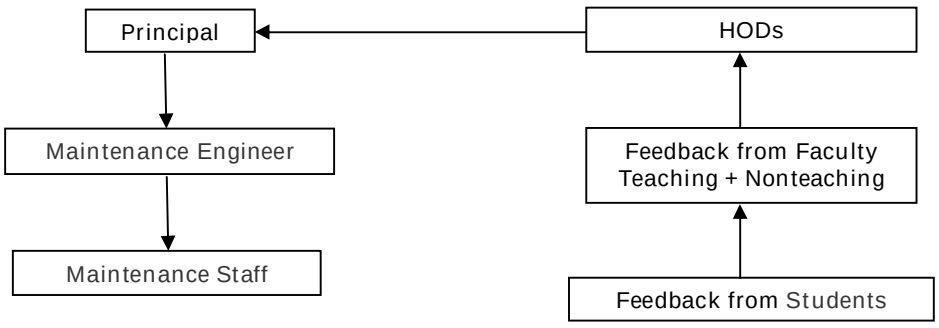


Figure 4.1: Functioning of maintenance department.

4.4.3 How and with what frequency does the institute take up calibration and other precision measures for the equipment / instruments?

The calibration measures are decided based on the frequency of use of equipment. Calibration is done internally by metrology lab in charge/expert of mechanical department. Institution also takes the help of outside agencies for calibration of equipments. Usually the calibration is done once in a year. Calibration of equipment and instruments is a periodical process. This is an area of priority as compared to other maintenance work. Experts in the related areas will be contacted for calibration purposes. Calibration of equipments in civil engineering is also done periodically.

4.4.4 What are the major steps taken for location, upkeep and maintenance of sensitive equipment (voltage fluctuations, constant supply of water etc.)?

To take care of voltage fluctuation sufficient numbers of voltage stabilizers have been installed.

For uninterrupted power supply in the college campus (including hostels), 02 Nos. of Kirloskar make Green Generator of 180kVA & 200kVA capacity has been installed in the college campus.

Besides this, the office, departments, library and common rooms have been provided with Invertors.

The details of BESCOM supply and generator facility provided are shown in Table 4.9.

Table 4.9

BESCOM Supply:	DHT 51 Substation details: 2x250kVA Transformer, Switch Gear , Panel board.
Power Generators:	1. 180 kVA capacity Kirloskar Make 2. 200 kVA capacity Kirloskar Make

These provisions have been made for the upkeep and maintenance of sensitive equipments as well as providing better atmosphere to the students and the staff.

The college and the hostels are having deep bore-wells and overhead tanks for 24 hours water supply.

Electric earthing is provided at all important locations. Fire extinguishers are provided in all hazardous places.

Purified drinking water is provided in the institute through water coolers.

Any other relevant information regarding Infrastructure and Learning Resources which the college would like to include.

The institution has received appreciable grants for strengthening of laboratory facility / Equipments and carrying out the research activities.

Faculty members are encouraged to get acquainted with available software.

The infrastructural facilities of the college are excellent. The departments are housed in individual blocks. The library has a spacious building of 8000 sq.m.

Institute is planning to obtain ERP for student and faculty governance, teaching-learning processes and learning management systems.

CRITERION –V

STUDENT SUPPORT AND PROGRESSION

CRITERIA V
STUDENT SUPPORT AND PROGRESSION

5.1 Student Mentoring and Support

5.1.1 Does the institution publish its updated prospectus/handbook annually? If 'yes', what is the information provided to students through these documents and how does the institution ensure its commitment and accountability?

The prospectus of the institution is published annually with the following information:

General Introduction
Vision Mission Statement
Quality Policy
Facilities
Courses offered- Under-graduate, Post-graduate, M.Sc. (Engg.), Ph.D. and their approved intake
Research work
Programs conducted- Academic, Extra & Co-curricular, socially responsible works, etc.
Training and Placements Activities
Affiliation and recognitions

More information is available at ***http://www.bietdvg.edu.*** Institute ensures its commitment and responsibility through a well-developed mechanism with utmost care taken through proper actions.

Responsibility in academics:
Responsibility in academics is ensured through various measures:

Proper time table
Detailed scheme of teaching
Structured class notes, power point presentations, teaching aids-charts, etc.
Tutorials and guidance.
Tests and assignments
Laboratory manuals and instruction sheets
Monitoring of attendance.
Student counseling
Interaction with parents.

a. **Accountability of teacher:** This is ensured through students feed-back on every teacher and subject. Properly designed feed-back forms will be distributed to students in the absence of the teacher. Student can frankly express his views. These feed-back forms will be analyzed and the findings are intimated to the staff concerned. Department head and principal will discuss with the staff concerned in case of any short comings and advice the staff to improve their performance.

b. **Responsibility of extending extra & co-curricular facilities:** This is ensured through different departmental forums, student council, cells, etc. established in the institute with adequate facilities and manpower.

c. **Skill and entrepreneurship development:** Many programs are conducted throughout the year by all the departments. In addition to this, placement cell of the institute also conducts variety of programs, workshops, invited talks, etc. Performance of the placement cell is monitored by Principal and Director. Details of various programs conducted by placement cell are given in **Annexure C-3.**

d. **Sports activities:** Separate sports department is established with one physical director and adequate numbers of supporting staff to look after sports activities. Details of facilities, events, etc. are given in **Annexure G-2.**

e. **Cultural Activities:** Students' council of the institute takes care of the various cultural activities organized throughout the year. The council consists of elected student members, Dean, student affairs and one staff convener along with other members. Details of council and activities for the last four years are given in **Annexure A-3.**

f. **Social Responsibility:** Institute is committed for ensuring social cause through variety of programs conducted through NSS, NCC, Youth Red Cross Wing etc. In addition to this different departments arrange many programs of social relevance. List of important programs conducted during the last four years by NSS, NCC and YRCW are given in **Annexure H-1.**

5.1.2 Specify the type, number and amount of institutional scholarships / free ships given to the students during the last four years and whether the financial aid was available and disbursed on time?

This institute provides a lot of incentives and scholarships/medals to meritorious students. There are many awards given by the institute. The details of awards /prizes given by the institute for the last four years are given in **Annexure A-2.** The financial aid was available and disbursed in time.

In addition to this top students from all the departments of every semester are identified and awarded cash prizes. The details of these prizes are given in **Annexure A-2.** Many of these medals are sponsored by philanthropists of Davangere city and alumni of our institute. List of university rank holders is given in **Annexure A-2.**

In addition to this annual merit scholarship is sponsored by Dr. Shamanuru Shivashankarappa Janakalyana Trust. Every year, poor meritorious students are identified and Rs. 7,500 cash scholarship is awarded to them.

Even though Govt. has fixed higher fee for COMED-K and Management seats, the institute offers seats in some branches for lesser fee, giving financial aid in the form of fee concessions.

5.1.3 What percentage of students receives financial assistance from state government, central government and other national agencies?

The percentage of students receives financial assistance from state government, central government and other national agencies are given program wise below

The financial assistance received from various agencies is furnished in Table 5.1.

Table 5.1: Details of SC/ST/OBC Scholarships

Sl. No.	Name of the department	Percentage of students receiving financial assistance			
		2012-13	2013-14	2014-15	2015-16
1	BM	18.33	9.17	10.00	12.50
2	BT	8.33	10.83	12.92	11.67
3	CIVIL	18.54	28.33	28.13	39.58
4	CS&E	26.25	30.42	31.25	37.08
5	CHEMICAL	16.67	22.50	25.00	30.00
6	E&E	32.50	32.08	37.08	47.08
7	E&C	26.67	35.21	39.38	43.33
8	E&I	18.33	20.00	25.83	16.67
9	IS&E	17.50	22.29	24.17	33.13
10	MECHANICAL	31.67	44.79	49.38	52.29
11	TEXTILE	23.75	31.88	36.25	41.88
12	MCA	12.92	12.50	17.92	22.08

5.1.4. What are the specific support services/facilities available for:

- ✓ **Students from SC/ST, OBC and economically weaker sections**

  The students get financial assistance from state government and other governmental agencies. In addition to this, separate book bank /extra books are provided from central library to the poor SC/ST and OBC students. Special coaching classes are also conducted for needy students.

- ✓ **Students with Physical disabilities**

  The classrooms and examination halls are provided at the ground floors for physically disabled students.

  They are well supported in laboratories, class rooms and other places by their classmates, teaching and non-teaching staff. Their vehicles are allowed inside the campus and till the main gate of the department.

  Ramps and lifts are provided in some blocks.

- ✓ **Overseas students**

  The Institution has a language laboratory. Students can use the same and increase their english proficiency.

- ✓ **Students to participate in various competitions/National and International**

  The students are motivated to take part in various competitions through recognition, awarding certificates and prizes at the departmental level. ISTE student chapter of the institute provides financial assistance to students participating in seminars and conferences. At departmental level, head and other staff members motivate the students to participate in these events. In addition to this, all the departments regularly

conduct national level student symposium /seminar to motivate the students.

- ✓ **Medical assistance to students: health center, health insurance etc.**

  Institute takes care of health of the students. Utmost cleanliness is maintained in the boys' and girls' hostels. Clean and hygienic food is supplied to all the students.

  One doctor is available in the institute.

  First aid kits are provided in all the departments and hostels.

  Fire extinguishers are provided in all the departments and hostels.

  Our association has two medical colleges and two dental colleges with ultra-modern hospitals within 1-3 km from our institute campus. Our institute has made an agreement with these medical institutes and students from our institute will be treated in these hospitals.

  Emergency ambulance service is available at very short notice to shift the needy to the hospital.

- ✓ **Organizing coaching classes for competitive exams**

  The Institution encourages all the departments to organize various value added programs to students apart from regular curriculum. Accordingly, through respective forums invited technical talks, workshops, hands on training sessions etc. will be arranged which will help the students to enhance their skills.

  Separate coaching for GATE aspirants is being regularly arranged- **MOU with GATE-ETC.**

  The institute has MOU with **M/S Global Educational Consultancy Service, Bangalore**. This organization conducts special sessions to train aspiring students for seeking admission to foreign universities.

- ✓ **Skill development (spoken English, computer literacy, etc.)**

  The institute has language laboratory and special training will be provided to the needy students in English.

  Special training programs to the students are regularly arranged for improving computer literacy.

  The institute provides internet facilities and has a modern digital library through which students can get related information and improve their computational skills.

- ✓ **Support for "slow learners"**

  For every 15 students there will be one counselor who regularly monitors students' performances in academics.

  Slow learners are identified by the counselors and separate coaching is arranged for them (Special classes / tutorials). Special care will be taken to build confidence in such students so that they will sail along with the main stream.

  Parents' meets are conducted at the departmental level to discuss the difficulties faced by the students.

  Progress reports of students are sent to parents.

- ✓ **Exposures of students to other institution of higher learning/ corporate/business house etc.**

  Students are encouraged to participate in live consultancy projects/product/process development.

  Regular interaction with premier institutes like IITs, IISc and NITs is made possible by inviting faculty of those institutes for invited talks and sending students to visit such institutes for literature/data collection, analysis, seminars, etc. (List of Important resource persons who visited the campus has been given in **Annexure F-4**)

  Students will be sent to different industries / consultancy firms for internship every year. List of major industries/consultancy firms in which our students undergo internship has been given in **Annexure C-4.**

  Regular industrial visits are arranged at the departmental level which will help the students to understand the industrial environment.

  Through technical talks, students will be made to interact with experts from different institutions (List of Important invited talks arranged in the institute has been given in **Annexure F-1)**

  All the departments regularly arrange seminars/conferences/ workshops/ training programs so that students will have sufficient opportunity to interact with experts. List of Seminars /conferences /workshops /training programmes arranged in the institute has been given in **Annexure F-6.**

- ✓ **Publication of student magazines**

  Every year institute brings out "Technowave", a students' magazine. This contains articles on technical and general topics written by students. Poems, innovative photography, drawings/paintings by the students of the institute are included. This magazine also contains group photographs of students of the departments and their email ID.

  Institute also publishes quarterly news-letter "BiTech Voice" in which detailed information about all the activities of different departments is published.

5.1.5 Describe the efforts made by the institution to facilitate entrepreneurial skills among the students and the impact of the efforts.

To inculcate entrepreneurship qualities among the students, Entrepreneurship development cell (EDC) has been initiated. Through EDC many programs are regularly conducted to improve entrepreneur skills.

In addition to this the institute encourages all the departments to conduct entrepreneurship development programs.

Students are encouraged to undertake industry related projects in which they will interact with industries and understand the work environment of different industries.

Students are given technical skill training to equip them to become competent engineers.

Many students of our institute have become successful entrepreneurs in different domains of engineering and have become

job providers. (List of entrepreneurship & skill development programmes arranged in the institute are given in **Annexures C-1 and C-3**)

5.1.6 Enumerate the policies and strategies of the institution which promote participation of students in extracurricular and co-curricular activities such as sports, games, Quiz competitions, debate and discussions, cultural activities etc.

Institute encourages participation of students in various extra and co-curricular activities so that one can develop a holistic personality which is essential in the present day scenario.

Separate sports department is established with one physical director and adequate number of supporting staff. They regularly conduct variety of sports competitions and activities. Students are encouraged to participate in University level games and competitions conducted by various institutes. List of students participated in university level teams has been given in **Annexure G-2.**

Every year "Sports day is celebrated" and awards / prizes will be given to winners. To encourage students to participate in sports activities, Best sportsman award will be awarded every year and the list is given in **Annexure G-2.**

Sports department provides all the facilities, a cricket ground, football ground, basketball ground, shuttle court, table tennis court, ball badminton court are available and properly maintained in the institute campus.(List of facilities provided for sports activities in the institute has been given in **Annexure G-2).**

Facilities are provided for indoor games like Chess, Carom, Table Tennis, etc.

For encouraging the students to participate in cultural events, "Students Council" managed by the students has been established.

The council has one Dean, a convener and four coordinators with Principal as president and Director as Hon. President. Class representatives elected by the students of the respective class will be its representative in the council. Class representatives will elect executive council members to manage all the activities of the students' council for the full academic year. Fig. 5.1 gives organizational chart of students' academic council for the year 2016-17.

Many events are conducted through students' council. Ethnic day is conducted in which students' exhibit cultural traditions of India. (Lists of Cultural and Sports activities conducted in the institute have been given in **Annexure A-3 and G-2**).

Other events like quiz competitions, debate and discussions, etc. are regularly arranged by the council.

Every year a mega cultural festival "Davana" will be conducted for three days in which competitions from Music, theatre, fine arts, dance and literary sections will be conducted.

In addition to this every department will conduct many sports and cultural competitions for their own students and students from other departments.

Separate institute budget is provided for conducting these activities.

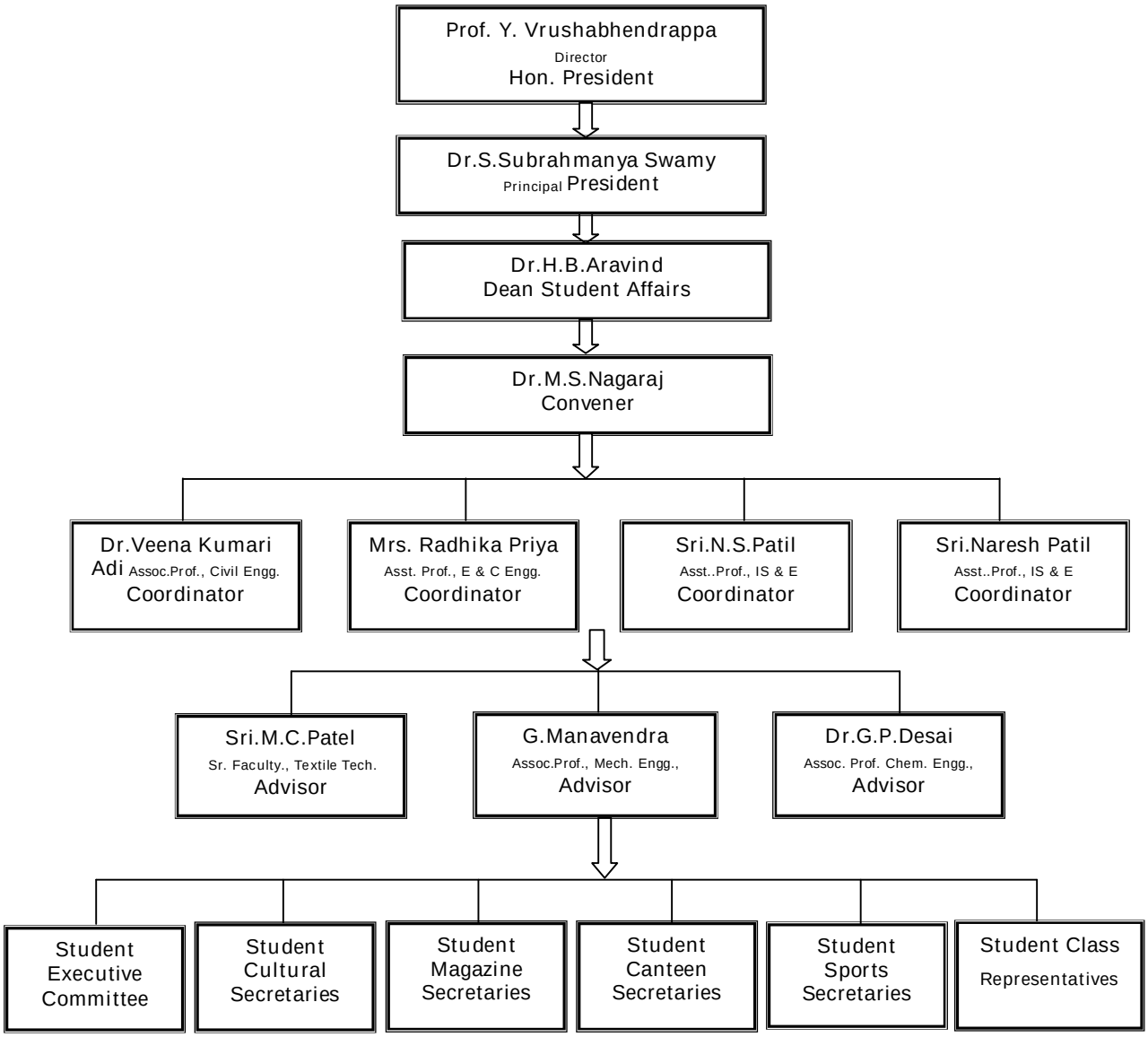


Fig. 5.1 Students' Council Organization Chart

Additional academic support, flexibility in examinations:

Flexibility is extended to the students participating in sports and other activities in attending tests.

As per University norms a 10% concession in attendance is permitted for students representing institute in inter college / university events. For students representing in inter university competitions, additional guidance in subjects will be provided by the respective departmental staff.

Special dietary requirements, sports uniform and materials:

The sports materials and other accessories are provided for the students who represent the Institution in various extracurricular and sports activities.

Any other: In addition to sports department, through students' council and departments many events are organized to enable students to improve their overall skills. The following are the programs conducted:

Mock interviews
Group Discussions
Quiz
Communication workshops
Personality development programs
Mental ability tests
Talks on yoga and health.
Talks on current trends and issues are regularly arranged for overall personality development of the students.

Details of important programs arranged by Placement Cell are given in **Annexure C3.**

5.1.7 Enumerating on the support and guidance provided to the students in preparing for the competitive exams, give details on the number of students appeared and qualified in various competitive exams such as UGC-CSIR- NET, UGC-NET, SLET, ATE / CAT / GRE / TOFEL / GMAT / Central /State services, Defense, Civil Services, etc.

Special training will be provided for students aspiring for GATE examination. Many students have appeared and qualified in GATE examination. GATE-ETC is conducting special coaching classes in the campus to train the GATE aspirants. A MOU has been signed in this regard with GATE-ETC.

There are various resources and facilities available in central library. The students are motivated to appear for various competitive examinations at institution and department level. The departments issue letter of recommendation to the students to facilitate their admissions in foreign varsities.

Efforts are on to provide coaching for GRE, GMAT and TOFEL examinations.

Also, many of the students are taking competitive examinations on their own.

Table 5.2 gives the details of training programmes organized in the institute for competitive examinations.

Table 5.2 : List of Training programmes organized for competitive examinations.

Sl. No.	Date	No. of participants	Event
01	17-02-2016	165	Career guidance programme-study abroad, conducted by Global Education Consultancy Services, Bangalore.
02	23-02-2016	220	Importance of GATE Program conducted by ETC Solutions.

5.1.8 What type of counseling services are made available to the students (academic, personal, career, psycho-social etc.)

Academic: The academic, personal and career problems of the students are addressed at the department level. The department has nominated faculty members as counselors/ caretakers for students. Every counselor/caretaker has 15 students. Faculty maintains records of the grievances of students and also the details of parents meeting. Parents are regularly updated about their wards attendance and progress in academics through letters, meetings, telephone calls and mails. Additional inputs will be given to students with poor performances.

Counselors counsel the following problems of the students:

Shortage of attendance.
Lack of IA marks.
Placements.
Issues with subject and subject delivery system/resource person.
Issues related to students facilities are addressed. Continual counseling has helped the students in making significant improvement in the IA marks and attendance.
Address students' personal issues like home sickness, finance management, time management etc.
Non participation in sports and cultural activities.

Personal: The counselor addresses personal problems of the students and records them in formats. If the problem is real and needs attention, then it will be brought to the notice of head/ Principal / Director who in turn meets the student/parent and discuss the issue to arrive at a solution.

Career: Details of higher education, job opportunities and career improvement are provided at the departmental level by a placement coordinator of the department who in turn coordinates with institute placement cell. Institute placement cell has an officer and supporting staff who assist all the departments to arrange activities concerned to placements.

5.1.9 Does the institution have a structured mechanism for career guidance and placement of its students? If 'yes', detail on the services provided to help students identify job opportunities and prepare themselves for interview and the percentage of students selected during campus interviews by different employers (list the employers and the programmes).

The institute has an exclusive placement cell to assist the students for placements. The Graduating students receive assistance through campus interviews/placements. The placement cells has a placement officer and supporting staff. Each department is represented by placement coordinator who interacts with placement cell for all the training and placement related activities. Placement cell guides the students to prepare for interviews by arranging personality development

programs, skill development programs, communication skill development activities, group discussions, technical quiz and tests, entrepreneur development programs, etc.

Placement cell has a complete database of all the students of our institute so that eligible students receive necessary information in time. The placement cell also maintains detailed list of all the resource companies along with complete contact details. Fig. 5.2 gives organizational chart of placement cell.

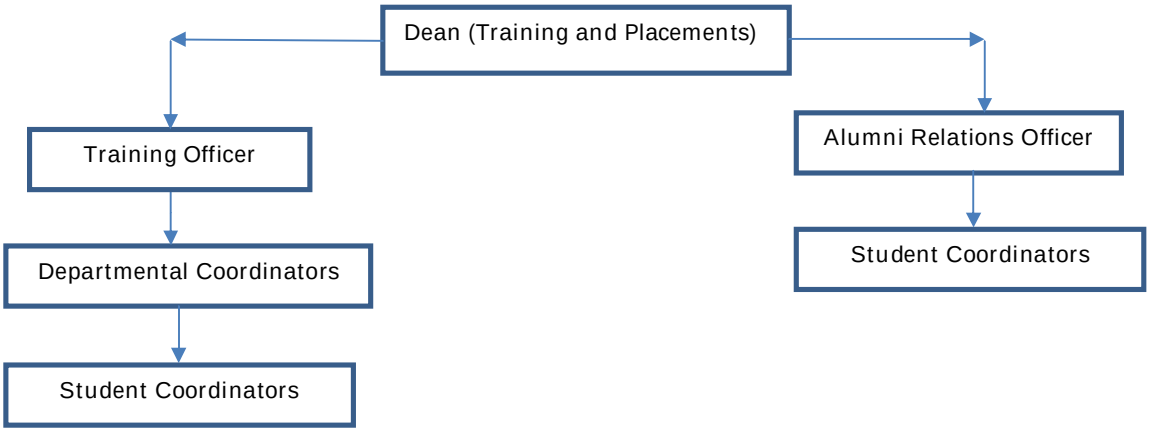


Fig. 5.2 Organizational Chart of Placement Cell

Details of jobs available, job description and the way students have to apply for the jobs are all displayed on the notice board. Messages will be sent to eligible candidates for attending interview in campus as well as off campus for recruitment.
The placement cell announces dates of campus interviews and makes proper arrangements for conduct of campus interviews. The placement cell has the entire infrastructure for conducting campus interviews with a modern seminar hall, group discussion room, interview cabins, office etc. to cater to the needs of different companies. **Annexure C-5** gives the details of placements for the last four years.

Placement details for the last four years are shown in Fig. 5.3.

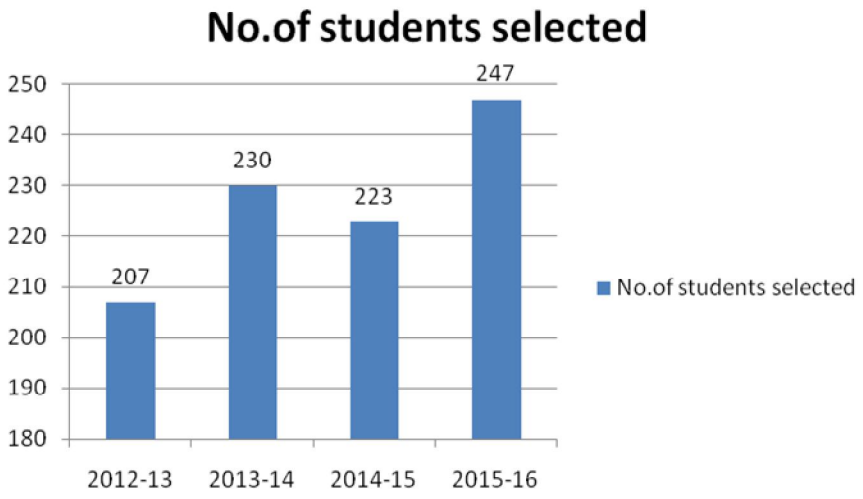


Fig. 5.3 Placement details for the last four years

Generally "one student -one job" principle is followed. Only in extraordinary cases, students with one job will be allowed to appear for one more selection and this is known as "dream option".

5.1.10 Does the institution have a student grievance redressal cell? If yes, list (if any) the grievances reported and redressed during the last four years.

At departmental level, students' grievances are taken care by the respective head and the counselor. At institute level, a grievance committee has been constituted with Principal and Director heading the committee. From each department one representative is nominated. The committee meets periodically and looks in to the problems of the students.

Following are some of the important grievances referred to grievance redressal committee by the students:

Campus cleanliness
Classroom cleanliness
Toilet cleanliness
Not able to adjust with local students.
Not able to adjust with food.
Not able to adjust with the environment.

List of members of student redressal cell is given in **Annexure E-1**

5.1.11 What are the institutional provisions for resolving issues pertaining to sexual harassment?

At institute level "Anti sexual harassment committee" has been formed headed by Principal and the Director. The committee has 12 members and represented by one senior faculty from each department. Phone

numbers of these members are displayed at important locations along with email id. Students can contact any of these members for addressing their difficulties. This committee meets once in month and discusses the issues raised by the students. There are no cases of sexual harassment reported so far in our institute.

List of anti-sexual harassment committee members has been given in **Annexure E-4**

5.1.12 Is there an anti-ragging committee? How many instances (if any) have been reported during the last four years and what action has been taken on these?

Ragging has been seriously viewed by institute authorities. Several preventive measures have been taken to prevent ragging in any form.

The statutory warning against ragging has been displayed at various locations in the Institute.

Quantum of punishment for ragging has also been displayed at prominent places in the institute and the hostel premises.

First year students have been housed in a separate hostel blocks and guarded well.

Outsiders are prevented from entering into hostel premises and the institute.

During working hours, strict vigilance is maintained to avoid ragging.

Flying squad has been formed in the hostel with warden, deputy wardens and one representative from each department as members who visit the hostel during the night hours and supervise the situations personally.

Vigilance is maintained in all the messes and canteen.

Continuous student counseling will be done to create awareness on ragging issues.

In addition to this at the institute level there is an Anti-Ragging committee with principal and director heading the same. One staff representative is nominated from each department and some senior students are also members. This committee meets once in a month and takes stock of the situation.
Ragging is strictly prohibited in the entire campus and there are no cases reported/ recorded as of date**.**

List of Anti-ragging committee members is given in **Annexure E-5.**

5.1.13 Enumerate the welfare schemes made available to students by the institution.

Institute takes lot of care about the student welfare and schemes/provisions are extended for overall improvement of the student community.

One health center has been in operation with basic medical facility and qualified doctor.

Agreement is made with JJM Medical College, SS Institute of Medical Sciences and College of Dental sciences which are situated close to the campus and managed by our own association. These medical and dental college hospitals are equipped with ultra-modern facilities to treat any kind of health problem. There are emergency units to take care of casualty. Ambulance service is provided to shift the needy in time. All the students of our institute are treated at very nominal rates in these institutes.

Cooperative stores is in operation and is housed in canteen premises in which students can buy required materials at concessional rates.

Multi gym facility is provided to students.

Scholarship schemes of different Governmental agencies have been made available to SC/ST/OBC students.

Awards and prizes are given to meritorious and top students of all the departments.

Institute encourages students to participate in various sports and cultural activities by creating all the necessary infrastructure.

Adequate facilities for extracurricular activities are provided in the institute.

5.1.14 Does the institution have a registered Alumni Association? If 'yes', what are its activities and major contributions for institutional, academic and infrastructure development?

The institute has an alumni association with principal as the president of the association. There are four office bearers and six members to look in to all the activities of the association.

The objectives of the association are:

To create a platform of all the old students of Bapuji Institute of Engineering and Technology to interact with each other and extend their support in overall development of the institute.

To help the students of BIET for placements and pursue higher education.

To conduct vocational training / technical training/ workshops for the students of BIET.

To provide scholarship for the students of weaker section and Prizes for the toppers.

Every year, one alumni meet is organized. A large gathering has been observed for these meets. An alumni feedback form has been uploaded in the website of the institute so that each alumnus can interact for the development of the institute. In addition to this every department organizes separate alumni meet to interact with the alumni and get feedback.

Contributions of Alumni:

Alumni have generously contributed and built "Silver Line Guest House" in the institute campus. This is a major contribution of alumni towards infrastructure development.

Some of the alumni have instituted gold medals/prizes to the toppers of our institute.

Many of alumni have helped our institute students to get placements through campus selections and off campus placements.
Many of alumni have helped in arranging internship training to our students and helped in arranging industrial visits by our students.
Alumni have helped in project and research assignments being carried out by our institute students.
Many of our alumni have given talks on areas of their work which has helped our students to expose to the new developments.
In addition to this, alumni regularly interact with the institute and share their knowledge in the field of technological developments.
Alumni have expressed frank opinion about the facilities and hinted some areas where things can be fine-tuned and improved.

Table 5.3 gives the list of some important areas of improvement suggested by alumni of our institute and most of them are addressed.

Table 5.3: List of important areas of improvement suggested by alumni.

Sl. No.	Broad area suggested for improvement.
01	Method of conducting laboratory classes
02	Providing study materials to students
03	Method of counseling
04	Conduct Entrepreneurship development programs
05	Conduct Skill development programs
06	Assigning industrial related projects
07	Refine Placement activities
08	Improve Sports and cultural activities
09	Extend better canteen facility
10	Start Incubation centers
11	Start Finishing schools
12	Improve ICT facilities

5.2 Student Progression

5.2.1 Providing the percentage of students progressing to higher education or the trends observed employment (for the last four batches).

The progression of students is shown in Table 5.4

Table 5.4: Progression of Students to higher education

Batch	2015	2014	2013	2012
UG To PG	84	100	94	93
PG To Ph.D.	20	21	17	15
Employed: Campus Selection	268	223	230	207
Other than campus recruitment	138	189	167	201

Trends observed:

There is an increase in the number of students joining higher studies and this may be because the extensive counseling in the institute about the benefits and necessity of higher education in the present day scenario.

There is an increase in campus selection in the recent years. This is because of the institutional efforts in extending strategic training to students and contributions of alumni.

There is an increase in the number of students going abroad for higher education.

Many of our students are interested in becoming entrepreneurs.

There is also definitely an increase in number of students undertaking consultancy and research assignments.

5.2.2 Provide details of the programme wise pass percentage and completion rate for the last four years (cohort wise/batch wise as stipulated by the university)? Furnish programme-wise details in comparison with that of the previous performance of the same institution and that of the Institutions of the affiliating university within the city/district.

The percentage pass for the last four years is furnished in Table 5.5. The completion rate is indicated by pass percentage. It can be observed that all the departments have maintained almost constant completion rate. Figure 5.4 indicates the institute results for the last four years.

Table 5.5: Students Pass Percentage

Sl. No.	Name of the Department	Year : 2015-16 Pass Percentage of students			Year : 2014-15 Pass Percentage of students			Year : 2013-14 Pass Percentage of students			Year : 2012-13 Pass Percentage of students		
		Dept.	Insti-tute	Univer-sity	Dept.	Insti-tute	Univer-sity	Dep-t.	Insti-tute	Univer-sity	Dep-t.	Insti-tute	Univers-ity
01	Bio Technology	100	95	77	95	97	78	100	99	80	97	97	82
02	Chemical Engineering	91			90			96			100		
03	Civil Engineering	93			95			99			97		
04	Computer Science & Engineering	98			99			99			94		
05	Electrical & Electronics Engineering	90			100			99			94		
06	Electronics & Communication Engineering	99			95			97			90		
07	Information Science & Engineering	96			93			94			99		
08	Electronics & Instrumentation Engineering (IT)	89			100			100			100		
09	Mechanical Engineering	96			94			98			96		
10	Textile Technology	98			98			100			100		
11	MCA	100			100			100			100		
12	BM	94			100			100			100		

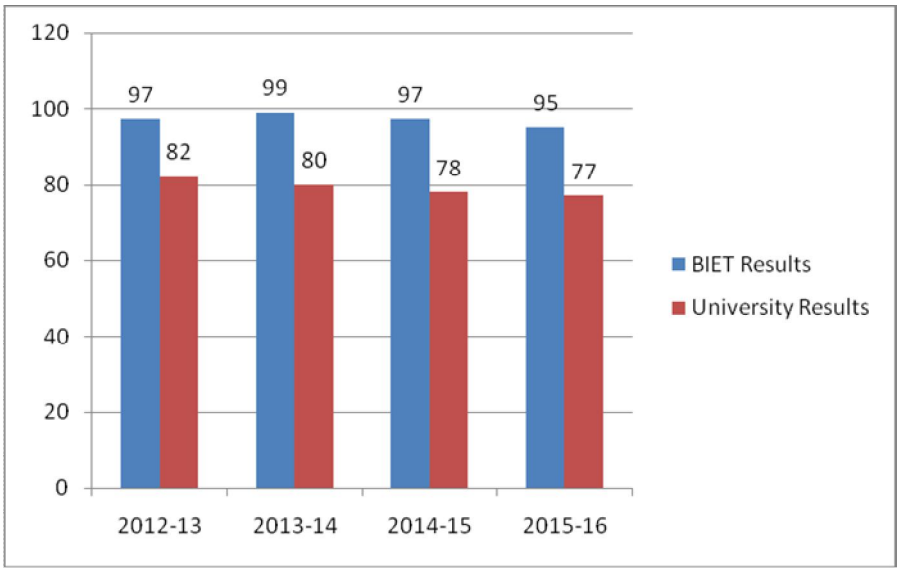


Fig. 5.4: Institute Percentage Result.

5.2.3 How does the institution facilitate student progression to higher level of education and/or towards employment?

The institution encourages the students to prepare for various competitive examinations through awareness programs at department/institute level.

Institute has MoU's with various industries/institutions/training groups. List of MoUs is given in table 5.6.

Table 5.6: List of MoUs with Industries / Companies

Sl. No.	Name of Industry/Institute/ Companies	Area of Specialization and cooperation
1.	Cargill India Pvt.ltd Belludi, Harihar (Taluk) Davangere - 577 601Karnataka, India	Fermentation, Bioprocess & Food technology
2.	Synthite Industries pvt. ltd Ranibennuru, Kawalettu, Karnataka 581123	Extraction of Value Added Spices and Bio-ingredients
3.	M/s Indian Cane Power Ltd Unit: Samsons distilleries, Duggavathi Village, Harpanahalli Taluk, Davangere District, Karnataka	Fermentation technology
4.	Skanda Life Sciences Private Limited, Sy No. 47, # 10, Sri Shaila Bramara Complex, Srigandada Kaval, Bangalore-560091,	Student projects in the field of anticancer, antidiabetic, cell culture and Fermentation technology
5.	Laxmi Genchem Sciences Pvt Ltd Plot No:90, Aleap Industrial estate Opp: KPHB, Pragathi NagarHyderabad-500090, AP, India.	Synthetic and medicinal chemistry
6.	Central Dogma Pvt.Ltd CIN:U74900PN2014PTC151301 Office:10, Sagar Apt, Parihar Chowk, Aundh, Pune- 411 007	Student training on various techniques in Molecular biology, Protein expression, analytical methods used in Biotechnology industry
7.	Biozeen- Bangalore Biotech labs Pvt.Ltd, 49/2, Gubbi cross, Hennur-Bagalur Road, Bangalore- 560 077	Bioprocessing & Fermentation technology
8.	Shamanur Sugars Ltd. Duggavathi Village, Harapanahalli (Tq) Davangere (Dist), Karnataka	Fermentation Technology
9.	Davangere Sugars Co.Ltd. Kukkuwada, Davangere (Tq) & (Dist) Karnataka	Bioprocessing technology
10.	College of Dental Sciences Post Box No: 327, Davangere – 577 004 Karnataka, India	Ph.D, PG and UG Student projects
11.	Samson's Private Limited, Duggavathi, Davangere	Monitoring of Environmental Parametrs
12.	Indian Cane Power Limited, Mudhol, Bagalkot	Monitoring of Environmental Parametrs
13.	Infosys campus Connect Program, Infosys Technologies, Bangalore	Soft skills, foundation program training aspiration 20-20, industry visit
14.	IBM Academic Initiative, IBM India Ltd., Bangalore	Training on IBM tools & technologies, the great mind challenge student contest, certification tests, cloud computing

Sl. No.	Name of Industry/Institute/ Companies	Area of Specialization and cooperation
15.	EMC² Academic Alliance Program, EMC² Inc, Bangalore	Storage area networks training and certification for students
16.	VM ware IT Academy program, VM Ware Technologies, Bangalore	Virtualization, cloud infrastructure training & certification for students
17.	Mukesh Patel School of Information Technology and Management, NMIMS, Mumbai	Academic collaboration
18.	Trident Tech Labs Pvt. Limited, University Program partner of Texas Instruments, India. on 13th Dec 2013	C2000 Teaching Lab setup
19.	M/s EdGate Technologies Pvt Limited University Program Partner of Texas Instruments, India on 30th Oct 2015r	Analog Lab set up
20.	M/S ASKAR MICRONS, Mysore, A Leading CNC Machine Tool Manufacturer.July-2013	Design and Develop high speed motorized CNC milling spindle
21.	DHIO Research and Engineering, Pvt.Ltd Bangalore, 2014	Technical support of DHIO
22.	Eduteccon Solutions India Private Limited Belgaum, 2015	IN- campus training on GATE from GATEEC for 2016 batch students

Separate GATE coaching has been made available to the GATE aspirants. GATE-ETC conducts special coaching to GATE aspirants. A MOU is signed in this regard.

Necessary information is made available to the students in time about the opportunities in higher education.

Placement cell puts lot of effort for campus selections.

Complete data bank of all the students has been maintained in the placement cell so that eligible candidates can get necessary information in time.

Internship training /industrial visits are regularly arranged by departments and placement cell so that students can understand work environment and many such internship have helped in getting placements in those companies.

Various skill training programmes are arranged by different departments and the list of such programmes arranged is given in **Annexure C-1 and C-3.**

ISTE students' chapter conducts many activities to guide students in skill development, higher education and entrepreneurship.

LEAD Cell has been established to train the students for acquiring leadership qualities. The activities of the LEAD cell are given in **Annexure H-1.**

We have applied for funding from Karnataka state government to start incubation center to help startup companies.

Detailed accounts of placement activities along with placement details are given in **Annexure C-3 and C-5.**

5.2.4 Enumerate the special support provided to students who are at risk of failure and drop out?

Students who are on the verge of dropping out will be identified by the departmental faculty and the respective HODs. Special attention and

counseling is provided for such students. Parents of those students are invited to the Institution to have positive discussion about their ward with the head, senior professors and concerned counselor. These moral support and advices offered to the students will put him/her back on the track of studies. Continuous counseling, attending students will help the students to complete the course. Special discussions / counseling will be arranged with principal/director for improving the performance of the students. Special remedial classes will be arranged for students who are at the risk of failure.

Institute also puts lot of efforts in arranging lectures / talks on personality development and creating interest in academics. Special classes /tutorials will be arranged to the needy students so that their performance can be significantly improved.

There has been a steady increase in the pass percentage of results and this is due to continuous consoling effort by the faculty. During the last four years the drop out percentage is less than 2 %.

5.3. Student Participation and Activities

5.3.1 List the range of sports, games, cultural and other extracurricular activities available to students. Provide details of participation and program calendar.

Sports/Games: The Physical Education and Sports Department is headed by a Physical Education Director, and is active in arranging many sports events throughout the year. The office is equipped with administrative and support staff.

To encourage multi-dimensional growth, BIET provides top infrastructure and complete modern sports facilities.
Additionally, there is a state of the art Gym and separate changing rooms for boys and girls. The Institution provides reward/ financial incentive for the students representing in National/State/University level events. The Institution provides all necessary support and facilities to achieve excellence in their pursuits. The Institution ensures that sufficient funds are available to encourage sports and extra-curricular activities. Sports department announces the calendar of events at beginning of the academic year. **Annexure G-1** gives the important events conducted during the last four years. Details of sports facilities are also given in **Annexure G-2.**

Cultural Activity:

For encouraging the students to participate in cultural events "Students Council" managed by the students has been established.
The council has two conveners with principal as the president. Class representatives elected by the students of the respective class will represent the class in the council. Class representatives will elect executive council members to manage all the activities of the students' council for the full academic year.

Many events are conducted through students' council. Ethnic day will be conducted in which students' exhibit cultural traditions of India.
Other events like quiz competitions, debate and discussions, etc. are regularly arranged by the council.
Every year a mega cultural festival "Davana" will be conducted for three days in which competitions from music, theatre, fine arts, dance and literary sections will be conducted.
In addition to this every department will conduct many sports and cultural competitions for their own students and students of other departments also.
Separate institute budget will be provided for conducting these activities.

Annexure A-3 gives the details of cultural events for the last four year.

5.3.2 Furnish the details of major student achievements in co-curricular, extracurricular and cultural activities at different levels: University / State / Zonal / National / International, etc. for the previous four years.

The achievements of students in co-curricular and extracurricular and cultural activities at various levels are furnished in **Annexure A-4.**

5.3.3 How does the Institution seek and use data and feedback from its graduates and, to improve the performance and quality of the institutional provisions?

There is an alumni feedback form uploaded in the institute website and alumni can interact at any time to give valuable suggestions to improve the academic standards of the institute. Alumni, Parents' and Employer feedback forms are given in **Annexure J.** Details of Alumni meet conducted are given in **Annexure I.**
The Institution organizes alumni meet regularly and during this meet, the feedback is collected from alumni for overall improvement of the Institution.
Each department conducts Alumni meet. Their valuable inputs are collected and are used to improve the teaching methodologies and to bridge the gap between academics and industrial requirements. The feedbacks during farewell to final year students are also useful for development of department and institution.

5.3.4 How does the Institution involve and encourage students to publish materials like catalogues, wall magazines, Institution magazine, and other material? List the publications/ materials brought out by the students during the previous four academic sessions.

Every year institute brings out magazine "Technowave" in which students exhibit their literary talents. The magazine contains articles on technical and present important general topics along

with poems, cartoons, drawings, photography and other creative works. This is managed completely by students' council. There is one magazine secretary elected by the students who along with group of other talented students organize the magazine pattern and release in time.

Institute also releases quarterly news magazine of the institute "BieTech Voice" in which details of all the activities of different departments are listed.

The creativity and other skills of the students are encouraged continuously in the institute. Students are involved in research project, where number of students publishes papers in reputed journals/conferences/workshops.

5.3.5 Does the Institution have a Student Council or any similar body? Give details on its selection, constitution, activities and funding.

For encouraging the students to participate in cultural events "Students Council" managed by the students has been established.

The council has two conveners with principal as the president. Class representatives elected by the students of the respective class will represent the class in the council. Class representatives will elect Executive council members to manage all the activities of the students' council for the full academic year.

Many events are conducted through students, council. Ethnic day will be conducted in which students' exhibit cultural traditions of India. Organization chart of "Students' Academic Council" is given in Fig. 5.1.

Other events like quiz competitions, debate and discussions, etc. are regularly arranged by the council.

Every year a mega cultural festival "Davana" is conducted for three days in which competitions from Music, theatre, fine arts, dance and literary sections will be conducted.

In addition to this every department will conduct many sports and cultural competitions for their own students and students of other departments also.

Separate institute budget of around Rs. 7 lakhs per year will be provided for conducting these activities.

5.3.6 Give details of various academic and administrative bodies that have student representatives on them.

Students participate in almost all the activities of the institute for which many committees / bodies are formed.

Students' Council: All the activities are managed by the students. From each class of different departments one class representative is elected by the students, who will be the member of the council. In turn class representatives elect student council "Executive Committee" members and each one will manage different activities.

The students are included in various bodies at department and institution level. The student members in various committees are given below:

Placement Committee
Canteen committee
Magazine committee
Cultural Committee
Sports committee.
Anti-Ragging committee
ISTE Students' chapter
Hostel Managing committee
Anti-Sexual Harassment committee.
Grievance Redressal committee.
Departmental Forums

5.3.7 How does the institution network and collaborate with the Alumni and former faculty of the Institution. Any other relevant information regarding Student Support and Progression which the Institution would like to include.

Alumni feedback forms are uploaded in the institute website and alumni regularly interact with institute authorities and give their valuable feedback.
Alumni meet are conducted regularly at institute and departmental level.
Institute has alumni association which coordinates all the activities.
Department keeps all the records of alumni and has continued contact with alumni.
Department keeps in touch with former faculty members for feedback.
For important functions/seminars, former faculties of the department are regularly invited.

CRITERION –VI

GOVERNANCE, LEADERSHIP AND MANAGEMENT

CRITERIA VI
GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1 Institutional Vision and Leadership

6.1.1. State the vision and mission of the Institution and enumerate on how the mission statement defines the institution's distinctive characteristics in terms of addressing the needs of the society, the students it seeks to serve, institution's traditions and value orientations, vision for the future, etc.?

Our vision is to be in the forefront of technical education at the undergraduate, postgraduate and doctoral levels besides serving society by undertaking various industrial and society related activities.

Our mission as an institute is to provide the best possible technical education to students besides inculcating in them the values of various virtues, which will enable them to become lovable citizens of the country.

Our institute started in the year 1979 under the banner of Bapuji Educational Association with an intention of providing and promoting technical education to the students residing in and around Davangere.

Mission statement outlines the institution's distinctive characteristics as follows:

Provide quality and value based education.

Promote the overall growth of the students to meet the requirements of the stake holders.

Encourage Research and Development activities.

Institution is committed to impart quality education along with ethical, moral values and team spirit. To achieve this, institution has good ambience, infrastructure, qualified faculty and state-of-art laboratories.

Our main aim is to inculcate in young minds innovative ideas, values of morality, discipline, patriotism and social responsibility. The institution strives to create an atmosphere conducive to gain knowledge and acquire skills by organizing personality development programs which help them to become industry ready products and take up entrepreneurship.

Institution encourages the faculty and students to carry out research and development activities to address the needs of the society.

6.1.2. What is the role of top management, Principal and Faculty in design and implementation of its quality policy and plans?

An approved Managing Committee called "Governing Body" is constituted by the institution which includes:

Sri A. C. Jayanna, President.

Dr. Shamanur Shivashankarappa, Hon. Secretary of Bapuji Educational Association.

Sri S.S. Mallikarjuna, Joint Secretary of Bapuji Educational Association.
Sri Mudegoudra Revanasiddapa, Member
Sri A.S. Veeranna, Member
Sri R.Ramanand, Member
Member nominated by AICTE, New Delhi.
Industrialist nominated by AICTE, New Delhi.
Member nominated by Visvesvaraya Technological University, Belgaum.
Member nominated by Directorate of Technical Education /Member nominated by Government of Karnataka.
Industrialist nominated by Government of Karnataka.
Dr. S. Subrahmanya Swamy, Principal, Member Secretary.
Prof. Y. Vrushabhendrappa, Director, Member
Senior Faculty, Bapuji Institute of Engineering and Technology.

The Principal, Director, Deans and Heads of the Department design the quality policy, plan and strive for the implementation with faculty coordination. The proceedings are reviewed periodically by the Principal and corrections are incorporated if any. A meeting of the governing body is convened every six months to discuss the important issues of the institution and suggest remedial measures.

6.1.3. What is the involvement of the leadership in ensuring:

the policy statements and action plans for fulfillment of the stated mission

Institution has the vision and mission statement to design the quality policy. The leadership at all the levels of the hierarchical structure of the organization is completely devoted for development and implementation of the policy.

formulation of action plans for all operations and incorporation of the same into the institutional strategic plan

The action plan is formulated by the planning body which includes Principal, Director, Deans, Heads of the department and coordinators of various academic committees. The planning body prepares action plan to implement the policy laid down by the management.

The plan includes:

Academics
Infrastructure
Tie up with industries to enhance industry institute interaction
Best practices adopted

Regular meetings of the planning body are held in the institute. The Principal, Deans, heads of the department conduct meetings with the faculty, students, experts from academia, industries and research centers.

Meetings with stake holders namely parents, alumni and employers are held to seek their advice for implementing some of the action plans for the progress of the institute.

The institution makes use of the performance of students in terms of pass percentage, placement percentage, and consultancy work to design and develop appropriate strategies. The details of these strategies are communicated to the employees so that, they execute and accomplish the requirements.

Interaction with stakeholders

Institution maintains the regular interaction with its stakeholders at various levels. Governing council meeting and academic advisory council meeting is conducted twice in academic year. Principal conducts regular meetings with heads of the department and faculty. counseling will be done twice in a semester to assess the students performance and also to motivate them to update their knowledge. Students regularity and progress will be intimated to their parents and show falls will be corrected.

Alumni meet is conducted to maintain the industry institution relationship.

Meetings with parents are held at the department level to inform and monitor the progress of their ward. Interactions with alumni are held both at institution and departmental level. They are involved in entrepreneurship development, training and placement activities. They are invited to deliver technical sessions about the recent advances in various disciplines.

Institute has Memorandum of Understanding (MOU) with industries. Industry-Institute interactions are carried out to help in upgrading the syllabus structure to be on par with current technology.

Proper support for policy and planning through need analysis, research inputs and consultations with the stakeholders

Management of the institution receives input from the stakeholders and critical analysis is carried out for effective actions. The governing body meets once in six months and takes stock of academic quality, requirements of infrastructure, alumni feedback on the requirements. Policies are formulated based on the analysis of the need.

Research inputs are received through alumni and feedback from industries.

Policy of the institution is designed with the consultation of all the stakeholders like alumni and industrial experts after the thorough analysis of requirements and technological advancement time to time through workshops, seminars, conferences, career guidance programs for faculty and students.

Reinforcing the culture of excellence

Institute is striving for excellence in quality engineering education through regular monitoring of academic activity, faculty improvement, student performance, extra- curricular activities, research culture and industry collaboration.

The students who excel in their academics are given meritorious awards. The institute felicitates University rank holders and top students of all the branches, year wise. They are encouraged for undergoing internship and vocational training programs. The details of student awards for the last three years are given **Annexure A-2.**

Faculties are felicitated with 'Best Teacher award' for achieving 100 percent result in the subject taught.

Faculties are encouraged to pursue higher qualification by deputing them for Ph.D. programme. Financial assistance is provided to attend conferences/symposium for presenting their innovative/research papers in their field and this facility is extended for attending the programs in abroad. A number of research projects have been completed which have industrial relevance, some product designs have been commercialized. The details of such projects are given in **Annexure B-3.**

Champion organizational change

Institute is ensuring that members of the academic community are engaged in research and development activities. They are provided with appropriate training and support. In addition they will be motivated to become more innovative and creative. This activation will support the institute to become a centre of excellence.

6.1.4. What are the procedures adopted by the institution to monitor and evaluate policies and plans of the institution for effective implementation and improvement from time to time?

Administration is decentralized by the Head of the institution by nominating Dean for Academic, Placement & Training, Students' welfare, Research & Development, Public Relations and Examinations.

Director, Principal, Deans and Heads of the department conduct meetings to review progress in policy implementation and for the redressal of the grievances, if any. The governing body and different committees are responsible for effective implementation.

The institution regularly monitors the performance of the students and the faculty and evaluates the policies and plans for effective implementation from time to time. The following is the procedure adopted:

Lesson plan for the subject is prepared by the faculty at the commencement of the semester.

Faculty in charge of the subject, Faculty counselor and Head of the Department monitors the daily/weekly/monthly attendance of students which is reported to parents in the case of the poor attendance.

Institute conducts three tests as per the academic calendar and the progress report of all first year students is sent to their parents. For higher semester, attendance status and test performance report is sent to the parents of students, if necessary.

Visvesvaraya Technological University conducts examinations every semester. The results of university examinations are analyzed and appropriate remedial action will be taken in areas of concern.

Institute also conducts parents meeting, alumni meeting and industrial experts meeting as and when required.

Project works, paper presentations, innovative ideas in developing experiments are encouraged by the institution.

Institution takes feedback from students, parents, alumni and industrial experts for the betterment of the institution.

Several committees are constituted by the principal to monitor and evaluate the policies of the institution for improvement. Some of these are academic planning committee, academic monitoring committee, time table committee, students counseling committee, placement cell, sports committee, canteen committee, hostel committee, anti ragging committee, grievance redressal committee etc. Every committee has its own objective and its performance is reviewed by the principal from time to time.

6.1.5. Give details of the academic leadership provided to the faculty by the top management?

The Dean Academic looks into the academic matters. The Principal, the Dean-academic and heads of the department periodically review the progress and problems by involving the faculty members.

The management of the institution gives full freedom to faculty members in presenting their views and suggestions for the development of the institution. Faculty are nominated as members of various committees constituted in the institute like:

Academic Committee
Students Welfare & Academic Council
Quality Assurance Committee
Examination Committee
Doctoral/Research Advisory Committee
Purchase Committee
Anti-Sexual Harassment Committee
Anti-Ragging Committee
Grievance Redressal Committee
Prohibition of Tobacco Committee
Internal Complaint Committee

Senior professors are drawn from various departments to head these committees. Some staff members and students are also part of these committees.

The details of these committees are available in **Annexure E.**

The institution also provides full freedom to faculty in organizing orientation programs, induction programs, seminars, workshops, development of innovative ideas, etc. Faculties learn the art of leadership through conduction of such programs.

6.1.6. How does the college groom leadership at various levels?

The Principal exhibits leadership in development of the institution in formulating the academic and administrative activities, coordinating effectively with faculty, staff, students and the society. The management always encourages the principal, faculty and the staff toward the development of institution.

The college grooms leadership quality by decentralizing responsibilities in various curricular and extra-curricular activities through respective Deans. Senior faculty members are assigned important portfolios for the smooth execution. Coordinators are nominated by rotation on tenure basis which provides an opportunity to all the professors, faculty members to improve administrative and technical skills.

The institution tries to build up leadership among the faculty at various levels. It involves senior professors in decision making and implementation process. Placement and Training cell arranges seminars on career guidance, personality & skill development and leadership enhancement programs.

Head of the department gives guidelines in the preparation of course materials / class notes /lab manuals and monitors their execution for smooth conduction. Head of the department prepares the departmental budget in consultation with senior faculty and lab-in charge. They also prepare departmental academic calendar to schedule forum activities, industrial visits and skill development programs.

Students' welfare and academic council is formed every year to look after student related activities. Students' welfare and academic council includes executive council members, magazine committee, cultural committee, canteen committee and sports committee.

Institute organizes various activities like annual sports, co-curricular, extracurricular and social activities to enhance the leadership quality among faculty and student community. All the events are organized by the student members of the committee concerned and supervised by their respective faculty coordinators. Students develop leadership qualities in organizing these events.

6.1.7. How does the college delegate authority and provide operational autonomy to the departments / units of the institution and work towards decentralized governance system?

An organizational structure is maintained where chairman is the supreme authority of the institution. Principal is the highest academic authority. Deans and heads of the department are directed by the principal. Academic committee

members are nominated by the Principal at the institute level and by the heads of the department at the department level for academic activities. Heads of the departments have operational autonomy at their department level to conduct various events which reflect into their departmental profile. This type of decentralization of responsibilities imbibes leadership quality in them.

The head of the institution decentralizes the governance system and autonomy is given to all the departments. Budget is placed at the disposal of the head of the institution. Powers are delegated to the heads of the departments in organizing workshops, seminars, preparation of class work, distribution of work to the faculty, teaching content beyond syllabus, inclusion of innovative ideas, nomination of faculty members as laboratory in charge, etc. The Head of the department prepares the academic schedule of the department in consultation with the faculty members. The Heads of the department and senior faculty are empowered to give recommendation letters to the outgoing students of our institution for pursuing Master's program and reference letters for placement.

The institution also delegated authority to the administrative unit of the institution. The administrative department gives certificates like, bonafide, attendance, railway concession, etc., as per the requirements of the students. This unit also has autonomy in overseeing the functions of canteen, hostel, and any other matter related to the students. It implements the store inventory system and purchase of equipment, passes of bills for payment of money to the vendors.

6.1.8. Does the college promote a culture of participative management? If "yes", indicate the levels of participative management.

The college promotes a culture of participative management. The responsibility of managing the institution for its progress rests on the faculty, heads of the department, deans, Principal and Director. Various committee members work as a team for the betterment of the institute. At each level, there is an active participation in planning and implementation. The faculty is involved in planning and implementing the academic calendar and teaching learning process.

Students' academic council is formed since all activities of the institute are student centric. It plans and executes cultural and sports activities which would contribute immensely to meet the objectives of teaching and learning process. The institution also seeks feedback from the parents, alumni and employer for further improvement. Head of the department is involved in development, procurement, selection of new faculty, starting of new programs, and organizing invited/technical talks, seminars, workshops, faculty development program etc.

The Principal of the institution is a member secretary of the Governing Body which provides suggestions, monitors the procurement, introduction of new programs and welfare activities. The head of the institution is responsible for academic, nonacademic and administrative activities of the institution. On behalf of the institution, Principal interacts and corresponds with Visvesvaraya

Technological University, AICTE, and Directorate of Technical Education, Govt. of Karnataka.

Coordinators/conveners of various committees such as anti ragging, time table, women empowerment, sports cultural etc., are chosen from the level of heads, professors and associate professors. Members of the above committee are from staff and students.

6.2. Strategy Development & Deployment

6.2.1. Does the Institution have a formally stated quality policy? How is it developed, driven, deployed and reviewed?

The institute policy to achieve quality in higher technical education consists of:

- Inculcating the concepts of discipline, punctuality and ethics into thinking process of students to promote their overall growth.
- Motivating teacher to impart knowledge by continuous interaction with students within the frame work of rules and regulations of the university.
- Carrying out objective evaluation of the performance of students.
- Enhancing the academic skills of the faculty through Faculty development programs.
- Creating an atmosphere conducive to research in the campus.

Based on the vision and mission of the institution, the Governing body has framed the quality policy driven by the needs of the society, stake holders, industries, to bridge the gap in curriculum through providing good infrastructure and conducive learning environment, building harmonious work culture to meet the needs of the society and aspirations of the parents.
Considering the quality policy of the institution, the perspective plan has short term and long term goals.

Some of the major goals are:

- Centre of excellence in some departments like Civil, Mechanical, Computer Science, Information Science, Bio Technology, Chemical, Electronics and Communication, etc.
- Skill Development Centre.
- Finishing Schools.
- Incubation Centre.

The quality policy is to implement innovative teaching and learning process, to provide quality education with futuristic trends in engineering and technology, to develop the institution in the years to come as a leading technological learning and research institution, to strive in establishing quality management system ensuring continual improvement.

At the beginning of every academic year the Principal holds a meeting with Deans and heads of the department to discuss the Academic Policy. Different committees are constituted to carry forward the assigned task. Periodically, the progress on implementation is reviewed and problems if any are rectified.

6.2.2. Does the Institute have a perspective plan for development? If so, give the aspects considered for inclusion in the plan.

Yes, the institution has perspective plans for development. Keeping in view the demand of the time, plan of action is prepared for the holistic development of the institution.

It is developed by the head of the institution, under the guidance of the Governing body. Based on the academic calendar given by the affiliating university, Dean Academic prepares the institute calendar that covers various programs of all departments in consultation with the Head of the Department's. The planning and execution is monitored by the principal regularly. Adequate annual budget is part of the development plan. The aspects that are included in the perspective plan are drawn from the recommendations of the following committees: Viz: Student Welfare & Academic Council, Entrepreneur Development Cell, Grievances Redressal Cell, Anti ragging committee, library Advisory committee, Hostel committee, etc.,

Perspective plan of the institution:

To obtain accreditation from NBA, NAAC and Permanent Affiliation from the University.

To enhance the number of MoU's with Industries.

To improve placements in the core domains and achieve 100% placements for eligible students.

To establish GATE/CAT training centre.

To start PG programs in thrust areas.

To establish Incubation centre.

Establishment of R&D Center in all departments to involve faculty in qualitative research and produce good number of Ph.D. holders.

Procurement of enterprise resource planning software for efficient governance student performance, faculty performance and campus management

Introduction of new PG programs for industry relevant domains

To mobilize grants for research through several funding agencies

Establishment of research center, centre of excellence in each department and skill development center.

Increased Library Sources in the form of e journals and print journals

Enhanced internet facility

Conduction of FDP's in thrust areas and encourage faculty participation in FDP's, seminars, workshops, learning programs, etc.

Recruitment of qualified faculty as per AICTE.

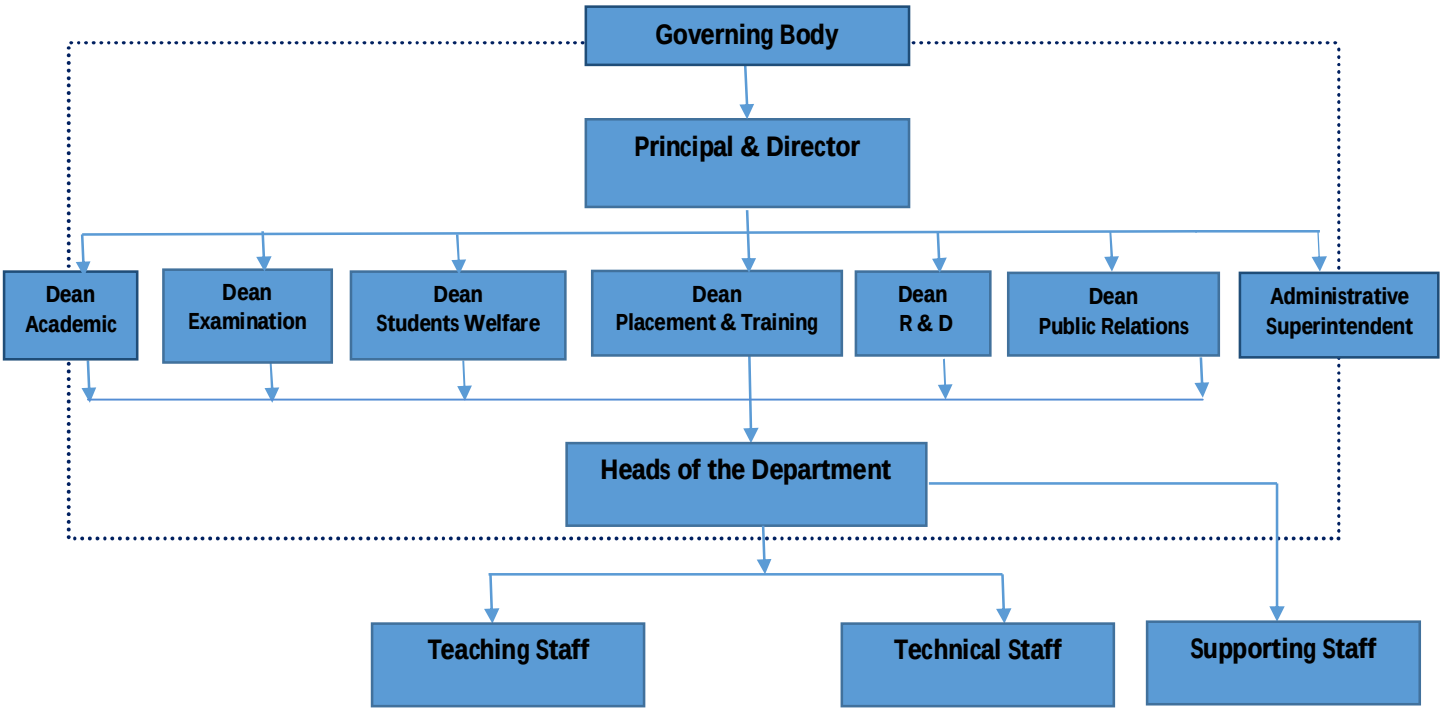
Conduction of community based programs like blood donation camps, NSS, etc.

Encourage greater alumni participation in the development of curriculum, etc

6.2.3. Describe the internal organizational structure and decision making processes.

Internal Organizational set-up is shown.

Decentralization is the key to strong organizational structure of the institution.



Internal organizational structure.

Role of Principal:

Following are the responsibilities of Principal:

To provide the resources to conduct the curriculum effectively.

To conduct internal assessment tests and university examinations.

To have liaison with the statutory bodies like UGC,AICTE,DTE and university.

To evaluate the faculty performance and to take necessary steps for their improvement.

To conduct staff and students' training programmes.

To strengthen the Institute -Industry relation.

To improve the placement potential of the college.

Prevention of ragging in the college through Anti ragging committee formation and action.

To arrange parent meetings, academic council meetings and governing body meetings.

To prepare institute Annual budget.

To plan for starting new programmes.

To plan for laboratory expansion as per the latest curriculum.

To arrange HODs meeting regularly to discuss academic related matters.

To arrange for new staff recruitment.

To monitor R&D centers and their activities.

To monitor the financial activities.

Dr. S Subrahmanya Swamy is the Principal of this institute. He has acquired his Post graduation in Mechanical Engineering from PSG College Technology, Coimbatore and Ph.D. from Kuvempu University. He has worked in the leading Machine tool industries for four years and has teaching and research experience of more than 25 years in this institute. He has guided many industry related PG and Ph.D. projects. Most of the projects guided have been implemented in industries. He is a design consultant to some leading industries in Bengaluru and Mumbai. He has been adjudged as the "Best teacher of the institute" in recognition of his outstanding contribution to the overall development of the institute.

Role of Director

Following are the responsibilities of Director:

To draw the road map for the next 10 years in association with management.

To advise principal and heads for the smooth conduction of academic activities.

To plan for additional infrastructure of the institute.

To interact with government and other funding agencies for revenue generation.

To plan for Incubation centre and finishing schools.

To plan for getting certification from NBA and other statutory bodies.

Prof. Y. Vrushabhendrappa is the present Director of this institute. He has acquired his Post Graduation from IIT Mumbai. He has worked as HOD of Mechanical Engineering and discharged his duties as Principal of institute for two decades. He has very good management and administrative skills and brought the institute to the higher levels in the map of India. He has been adjudged as the 'Best Engineering College Principal' from ISTE, New Delhi.

Role of Heads of department:

Following are the responsibilities of department head:

To monitor the academic activities of the department and to assure quality in those activities.

To organize co curricular activities.

To arrange for students counseling.

To conduct internal assessment tests of department.

To arrange for upgradation of department laboratories.

To procure latest books through library.

To plan for development of laboratories and infrastructure of the department.

To assist in employment of new faculty.

Following is the list of HODs of various departments:

Sl. No.	Name of the Heads of Department	Department
1.	Dr. H.B. Aravind	Civil Engineering
2.	Dr. S. Kumarappa	Mechanical Engineering
3.	Dr. M.S. Nagaraj	Electrical and Electronics
4.	Dr. Nirmala C.R.	Computer Science and Engineering
5.	Dr. Sunitha G. S.	Electronics and Communication
6.	Dr. Poornima B.	Information Science and Engineering
7.	Dr. B.E. Rangaswamy	Bio Technology
8.	Dr. G.P. Desai	Chemical Engineering
9.	Dr. K. Murugesh Babu	Textile Technology
10.	Dr. Chetana Prakash	Master of Computer Applications

Sl. No.	Name of the Heads of Department	Department
11.	Dr. Sujith Kumar S.H	Master of Business Administration
12.	Prof. Jayadevappa B.M.	Electronics and Instrumentation
13.	Prof. Ashalatha M.E.	Bio-Medical Engineering
14.	Dr. K.S. Basavarajappa	Mathematics
15.	Dr. B.E. Basavarajappa	Chemistry
16.	Prof. Geetha V.K.	Physics

Dean Academic:

Duties and Responsibilities

Preparation of institute academic calendar.

Scheduling of IA tests, sending progress report to the parents.

Appointment of academic counselors.

Redressing the problems of students regarding academics in coordination with academic counselors.

Appointment of Class Teachers and monitoring the academic activities such as:

- Maintenance of faculty diary.
- Monitoring of the attendance position and marks/results of the students and counseling those whose attendance/marks/results are poor.
- Conducting of bridge courses to improve the performance of the students.
- Matters related to scholarships.
- VTU – Academic matters.
- Matters related to project work.
- Discipline: Any incidence of indiscipline/ violation of norms/ conduct should be placed before the planning body committee and suitable action to be initiated.

Plan to start new academic programs.

Work for International/ National Collaborations in the field of academics.

Supervision of the declaration of results and award of medals and degrees.

Maintenance of academic records as per the requirement under rules.

Monitoring the library and ensuring that the library has adequate number of titles/volumes/journals as per VTU/AICTE norms.

Any other matters related to academics as assigned by the Principal and Director.

Accreditation by NBA and NAAC

Dr. K. Sadashivappa a senior Professor from Mechanical department is the Dean academic. He obtained his Ph.D. degree from IIT, Madras, Chennai in the year 2007. He was awarded with senior research fellowship in the year 1992 from CSIR New Delhi on a research project on “piston form errors in hydraulic actuators”. He is recognized as subject matter expert for the subject mechanical measurements and metrology by NPTEL, IIT, Madras.

Dean-Examination:

Duties and Responsibilities:

To monitor examination& related circulars for implementation.
Attendance & I.A. marks monitoring for university submission.
Question papers indent.
Practical approvals & Smooth conduction
Result monitoring.
Payment of examination fee related matters.
Appointment as Deputy Chief Superintendents and Squads.

Dr. S. Kumarappa, Head of Mechanical Engg. Department, is the Dean examinations. He is awarded with a) best project award by Agastya International foundation in the year 2016 for the project on “Demonstration of hybrid wind turbine for power generation at high way medians and on roof tops, b) outstanding project awarded by Karnataka state bio-fuel development board for the project “conversion of flower waste into bio-ethanol and performance evaluation on single cylinder IC engine”.

Dean Students Welfare and Academic Council:

Duties and Responsibilities:

Monitoring of students welfare
Formation of Students Academic Council
Organizing institution / university level cultural events
Organizing institution / university level sports events

Dr.H.B. Aravind, Head of Civil Engg. Department is the Dean Students' Welfare and Academic council. He is awarded with scientist of the year 2011 by National Environmental Science Academy New Delhi for his contribution and services in the field of environmental science and engineering.

Dean-Training and Placement:

Duties and Responsibilities:

Maintaining good interface with industries of interest so as to facilitate training of students.

Inspiring the faculty to update so as to include in their teaching the requirements of industry and produce industry ready graduate.

Approach the industry for industry-institute partnership

Creating placement avenues in different industries involved in training of students.

Organize workshops on disciplinary skill sets, professional skills, and encourage student, staff, and faculty participation in professional development workshops.

Dean shall constitute various cells to accomplish, improve and update important information required for placement and training of students:

Company's database Cell

Creation of student database Cell.

Maintenance and updating of website related to placement and training information.

Industrial Cell:

- Surfing of internet to look for various industries/companies looking for recruitment of engineering graduates. This leads to the creation of database of industries which can be approached to accomplish various tasks of training and placement.
- It will make efforts to bring experts from different industries for various forms of interactive sessions with students and faculty.

Alumni Relations Cell: To create and update database of alumni of the institute so as to get benefit of their industrial experience, personal achievements and influences.

Dr. B. Poornima, Head of Information Science and Engg. Department, is the Dean Training and Placement. She obtained Ph.D. degree from Kuvempu University in the year 2012. She carried out the research on 'Studies in fuzzy graphs".

Dean- Research and Development

Duties and Responsibilities:

Help to facilitate strengthening of the Institute's research capabilities; proactively promote basic research and monitor quality of research work done.

Motivating the faculty to prepare project proposals and apply for funding from various funding agencies

Monitor the effective utilization of funds of externally funding projects and ensure that the projects are completed in time.

Facilitate the Consultancy work in the institution.

Motivating the faculty to write research papers for publications, maintain and update record of research publications

Ensuring sponsoring of faculties for attending conferences/seminars/workshops as per institute norms.

Ensuring that every department periodically organizes seminars/workshops/national and international conferences etc.

Encourage faculty to register for Ph.D. and carryout quality research as reflected in the publications.

Convene the meetings pertaining to R & D regularly.

Dr. B.E. Rangaswamy, Head of Bio Technology department is the Dean Research and Development. He was awarded with P.H. Gregory young scientist award by Indian Aerobiological Society Kolkata in the year 2007 for his best research paper. He has presented a research paper at 5th European symposium on Aerobiology held at Krakow, Poland in the year 2012. He attended 10th basic course in Aerobiology held at Roskilda University, Denmark in the year 2011.

Dean-Public Relations

Duties and Responsibilities:

Ensuring all important activities that take place in the institute for wide publicity in the media.

Planning publicity strategies and campaigns.

Dealing with enquiries from the public, the press, and related organizations.

Organizing promotional events such as press conferences, open days, exhibitions, tours and visits.

Arranging interviews, press conferences and presentations

Analyzing media coverage.

Commissioning or undertaking relevant market research.

Designing, writing and/or producing presentations, press releases, articles, leaflets, 'in-house' journals, reports, publicity brochures, information for web sites and promotional videos.

Preparation of prospectus, maintaining institute web site.

Interaction with Alumni of Institute.

Display of information in the campus.

Dr.K.Murugesh Babu, Head of Department of Textile Technology, is the Dean Public Relations. He was awarded with common wealth fellowship in the year 2014. He was invited as visiting professor by Moorva University, South Africa to establish new textile laboratories. He was awarded with a research fellowship in H K Polytechnic, Hong Kong in the year 2007-08 to carry out post doctoral research on advance textile materials such as shape memory textiles. He was also awarded research fellowship by Oxford Bio Materials, UK in the year 2006 to carry out post- doctoral research on silk based bio materials.

6.2.4. Give a broad description of the quality improvement strategies of the institution for each of the following

Teaching & Learning
Research & Development
Community engagement
Human resource management
Industry interaction

Teaching and Learning

Institution has the strategy of planning academic activities, before the commencement of the semester/year. The academic calendar is given by the affiliating University and the faculty prepares lesson plan. Internal evaluation is carried out by the faculty, and semester examinations are conducted by the University. The evaluation results are analyzed and students' feedback is obtained, and if necessary, changes are made in the delivery of subject.

The institute promotes innovative teaching learning methods and extensive use of Information and communications Technology.

Faculties are encouraged to attend workshops, seminars, faculty development programs and Induction program for skill upgrading and modernizing teaching methodology.

Institution conducts skill training for students.

Encourage students to participate in industrial projects.

Extensive use of PPT, NPTEL videos, Teaching aids.

Research and Development

Faculties are encouraged to pursue research by providing them leave for higher studies.

Faculties are motivated to carryout consultancy work with industries.

Faculties are motivated to carryout research in association with industries and institutes of repute.

Signings of MOUs with industry to conduct industry related projects, sending students for internship and skill development.

Faculties are provided with Library and Laboratory facility for research work.

Faculties are motivated to contribute their research articles in conferences and reputed journals.

Forward the research project proposals for sponsorship from various funding agencies.

Work with Government organizations/NGOs for product development.

Community Engagement

NCC, NSS and LEAD units of the college are actively involved in the community development programmes. Institute conducts NSS activities related to health and hygiene, environment, literacy among the rural people, blood donation camp, effects of tobacco usage on health etc. This enables students of our college to get an opportunity to serve the society.

Priority areas like environment, social forestry, health and sanitation, education and culture are given emphasis for community engagement.

Students have actively participated in "Swachh Bharath" and leadership training program.

Students have participated in Smart city activities.

Conduction of Constitution day, Womens' day, Sadbhavana divas, Science day, etc through departmental forums.

Human Resource Management

Potential talents of the students are explored through extra-curricular activities.

These talents will be nurtured and a platform is provided for exhibiting their expertise through departmental forums.

HR management is well defined for staff recruitment based on the merit of the applicant.

Recruitment is based on guidelines of AICTE.

Interviews are conducted for prospective candidates after initial screening by the interview committee. Interview committee generally consists of subject experts from Institutes of repute and industry.

Institute encourages faculty to attend seminars, workshops, invited lectures, research activities. It also conducts the training and induction programs for the employees.

Promotions to eligible faculty on requirement basis.

Amount collected through consultancy will be shared among the faculty.

Encourage faculty to acquire higher qualification.

Industry Institute Interaction

Regular industry-institute interaction programs are being arranged to introduce the industry readiness and work culture.

Institute has signed MoUs with industries. Institute conducts regular meetings and gets suggestions for curriculum developments. These suggestions are forwarded to the University for incorporating in the syllabus, as and when revised.

Industrial visits and training in the respective domains.

Industries will be requested to provide internship, awards to meritorious students and financial assistance for research.

6.2.5. How does the Head of the institution ensure that adequate information (from feedback and personal contacts etc.) is available for the top management and the stakeholders, to review the activities of the institution?

The top management - Governing Body meets at least once in every six months. The institutional planning body along with members of respective committees schedule meeting at various occasions to review the activities of the institution.

The Head of the institution collects feedback from students, parents, industry, faculty, heads of the department, etc., by using the formats which are developed by the institute. The head of the department interacts regularly with the Principal. Principal interacts with the regulatory bodies, like AICTE, VTU through formal letters, meetings, and takes suggestions and guidance.

The Principal conveys the feedback of the regulatory bodies to the management. If any emergency matter is to be discussed, the Principal communicates to the chairman. The management gives suggestions to the Principal for necessary action. The Principal also presents the detailed annual report of activities of the institution.

The Principal also organizes the meetings with the parents, alumni, industry, R&D experts and presents a report of the institution and seeks their suggestion for the betterment of the institute. Management members are accessible to the Principal all the time for guidance and suggestions.

6.2.6. How does the management encourage and support involvement of the staff in improving the effectiveness and efficiency of the institutional processes?

The management whole-heartedly supports the effective measures prescribed by the planning body for the development of the institution.

The management encourages and supports the involvement of staff in improving the institutional process. Faculties are encouraged to go for higher education, attend seminars, workshops, conferences, conducted by reputed institutions. This improves the effectiveness and quality of the faculty and enhances the efficiency of the institutional process through effective involvement of teachers.

6.2.7. Enumerate the resolutions made by the Management Council in the last year and the status of implementation of such resolutions.

The management is emphasizing on intake of quality students; students discipline, hostel accommodation, water supply facilities, congenial study/teaching atmosphere, good results in examination etc.

According to the status of implementation of the resolution, the institution has successfully achieved the targets by intake of students with high cut-off marks, ensuring students discipline, hostel and water supply facilities, and excellent examination results. Some of our students have secured ranks in the university results.

Best projects are identified from every department both at UG and PG level and are rewarded.

6.2.8. Does the affiliating university make a provision for according the status of autonomy to an affiliated institution? If "yes", what are the efforts made by the institution in obtaining autonomy?

The affiliating university has a provision for according the status of autonomy to an affiliated institution. BIET has not opted for autonomous status.

6.2.9. How does the Institution ensure that grievances / complaints are promptly attended to and resolved effectively? Is there a mechanism to analyze the nature of grievances for promoting better stakeholder relationship?

Institution has a grievances redressal cell to resolve the grievances of students and faculty.

Grievances / redressal committee provide suggestion boxes in all the departments. The committee conducts meetings to resolve grievances immediately if any.

The anti-ragging committee functions well in the college and there is display of the notices against ragging in the notice boards.
The details of the above committees are available in **Annexure E.**

6.2.10. During the last four years, had there been any instances of court cases filed by and against the institute? Provide details on the issues and decisions of the courts on these?

No

6.2.11. Does the Institution have a mechanism for analyzing student feedback on institutional performance? If "yes", what was the outcome and response of the institution to such an effort?

The Institution has a mechanism for analyzing student feedback on institutional performance. The progress of the implementation is monitored by the Principal, Director and Internal Quality Assurance Committee.

The feedback from the students regarding faculty members' teaching, facilities available in the institution and improvements if required are periodically collected and analyzed. Remedial measures, if required, are taken immediately. The alumni feedback, employers feedback, parent feedback and students' feedback helps the administration and the Principal to interact with faculty and heads of the department to improve the institution performance.

6.3. Faculty Empowerment Strategies

6.3.1. What are the efforts made by the institution to enhance the professional development of its teaching and non-teaching staff?

A systematic work culture is developed in the institution. Faculty members are deputed for attending refresher courses, seminars, workshops and faculty development programs for their professional development. They are motivated

to pursue Ph.D. and are encouraged to publish their research work in conferences and journals.

Faculties are provided with state-of-art library facility, e-learning facility and audio-visual teaching aids.
Faculties are encouraged to take up consultancy and industry related projects.

Non-teaching/ Technical staff are deputed for vocational training, refresher course, computer education for the conduction of laboratory examination and office automation. They are deputed to upgrade their technical skills in calibration, maintenance and software tools. Instructors are made to actively participate in research projects as assistants.

6.3.2. What are the strategies adopted by the institution for faculty empowerment through training, retraining and motivating the employees for the roles and responsibility they perform?

Faculty members are entitled with study leave to pursue higher education.
Faculties are encouraged and sponsored to attend training programs, refresher course to update in teaching and technical skills.
Institution rewards the faculty with Best Teacher award for obtaining 100 % result in the subject taught.
Women faculty members are given maternity leave.
Departmental promotions are made based upon higher qualification and experience, and increments are granted annually in the pay scale.

6.3.3. Provide details on the performance appraisal system of the staff to evaluate and ensure that information on multiple activities is appropriately captured and considered for better appraisal.

In every academic session, student feedback is taken to evaluate the academic performance of the faculty.

Various criteria have been considered in the confidential format to evaluate staff performance. Staff confidential report of new faculty members are submitted by the heads of the department to the Principal. The remarks by the Principal are sent to the governing body which will be considered at the time of regularization and promotion of the faculty concerned.
The performance of the faculty is obtained through the head in terms of their overall performance in Academics, other activities like student mentoring, participation in forum activities, paper presentations in national and international journals, conferences, use of teaching aids, quality of the projects guided, etc.

6.3.4. What is the outcome of the review of the performance appraisal reports by the management and the major decisions taken? How are they communicated to the appropriate stakeholders?

The appraisal report is used for the regularization of the services of the staff and for their probation.

Underperforming or poor performing faculty members are properly counseled. All teaching faculty performance is judged through appraisal report and students feedback. If any short fall is found, they will be directed to improve. If the behavior and performance is not up to the mark even after the instructions, stringent action will be taken against such faculty.

6.3.5. What are the welfare schemes available for teaching and non-teaching staff? What percentage of staff have availed the benefit of such schemes in the last four years?

The following are service benefits and welfare measures extended to the employees of the college:

Teaching:

Employee's Provident Fund cover regular employees welfare -57%
Gratuity facilities-100%.
Medical facility-100%.
Maternity leave to the women employees, for a period of 135 days.
Vacation leave 100%.
Research promotion.
Quarters-01%.

Non-Teaching:

Employee's Provident Fund cover regular employees welfare -99%.
Gratuity facilities-100%.
Medical facility & Employees State Insurance facilities- all those having gross salary below Rs. 21000.
Earned leave-100%.
Earned leave encashment-100%.
Maternity leave to the women employees, for a period of 135 days.
Festival advance-100%.
Meritorious awards for employees children studying professional course.

6.3.6. What are the measures taken by the Institution for attracting and retaining eminent faculty?

Institute has taken the following measures for eminent faculty members:

Encouraging faculty to represent institution at national and international level programmes.
Institute creates facilities for R&D work and consultancy.
Special duty leave.
Appointment to certain higher posts by rotation to enhance professional and leadership quality.
Sharing of earnings out of consultancy on the basis of policy adopted in the institute.
Encourage faculty to pursue Ph.D.
Deputing them for national and international seminars and conferences.
Encourage them to actively involve in R and D activities related to industries.

6.4. Financial Management and Resource Mobilization

6.4.1. What is the institutional mechanism to monitor effective and efficient use of available financial resources?

Planning and budgetary control are effectively monitored in the institution. Budget is prepared in accordance with the estimation submitted by the departments. The institution prepares the budget after taking into account of the sources of income and estimated expenditure. It mainly allocates funds for the salary, infrastructure development, faculty development, research, library, canteen, and hostels. The institution monitors the income by the admissions of the students in to the institution and revenue collection in the form of deposits (loans from banks), interest derived on deposits and other assets. Salary component, infrastructural requirement based on increased intake and new courses, the equipment in laboratories, furniture, books, journals and sundry expanses are considered as expenditure. This study is carried out in association with the management, chartered accountant, office manager based on previous year expenditure.

Budget is presented before the Governing Council and approved. A transparent procedure is adapted by the account section of institution where each credit and debit is recorded.

The financial resources of the institute are managed effectively. The following types of accounts are in operation.

Receipts and payment accounts
Income and expenditure accounts
Balance sheet.

6.4.2. What are the institutional mechanisms for internal and external audit? When was the last audit done and what are the major audit objections? Provide the details on compliance.

Financial audits are taken up by the chartered accountants at the end of financial year. Last audit was done for the assessment year 2015-2016.

The institution audit is done during the month of April every year. The audit report for the last three years is enclosed in **Annexure K**

6.4.3. What are the major sources of institutional receipts/funding and how is the deficit managed? Provide audited income and expenditure statement of academic and administrative activities of the previous four years and the reserve fund/corpus available with Institutions, if any.

The major source of institutional funding is tuition fees. The deficit is managed by the management. The details are available in the table 1.

Table I. Details of Income and Expenditure

Year 2012-13:

Details	Income, Rs
Fees	23,36,66,443/-
Other fees	30,00,216/-
Bank Interest	14,58,154/-
Grants	88,17,837/-
Total	**24,69,942650/-**

Details	Expenditure, Rs
Salary	10,69,48,321/-
Administrative	67,23,595/-
Maintenance	53,00,778/-
Miscellaneous	19,41,959/-
Consumable	10,64,903/-
Depreciation	2,01,27,825/-
Grants expenditure	17,49,433/-
Equipment	3,48,41,858/-
Total	**17,19,82,395/-**

Year 2013-14:

Details	Income, Rs
Fees	24,01,03,930/-
Other fees	43,47,433/-
Bank Interest	28,32,517/-
Grants	77,01,119/-
Total	**25,49,84,999/-**

Details	Expenditure, Rs
Salary	11,50,84,874/-
Administrative	1,06,99,822/-
Maintenance	48,51,168/-
Miscellaneous	18,94,337/-
Consumable	10,51,673/-
Depreciation	2,06,17,581/-
Grants expenditure	1,00,61,815/-
Equipment	5,32,81,949/-
Total	**21,75,43,219/-**

Year 2014-15:

Details	Income, Rs
Fees	25,11,32,400/-
Other fees	52,13,949/-
Bank Interest	28,80,521/-
Grants	47,36,527/-
Total	**26,39,63,397/-**

Details	Expenditure, Rs
Salary	12,21,78,297/-
Administrative	94,86,038/-
Maintenance	64,71,001/-
Miscellaneous	14,29,706/-
Consumable	16,49,452/-
Depreciation	2,45,76,018/-
Grants expenditure	15,26,349/-
Equipment	5,84,60,424/-
Total	**22,57,77,285/-**

Year 2015-16:

Details	Income, Rs
Fees	25,19,99,916/-
Other fees	41,00,419/-
Bank Interest	26,80,336/-
Grants	57,44,017/-
Total	**26,45,24,688/-**

Details	Expenditure, Rs
Salary	12,22,49,480/-
Administrative	93,74,663/-
Maintenance	75,22,458/-
Miscellaneous	19,30,953/-
Consumable	8,93,681/-
Depreciation	2,18,09,731/-
Grants expenditure	11,50,938/-
Equipment	7,73,00,168/-
Total	**24,22,32,072/-**

Consolidated Data
Income:

Details	2012-13	2013-14	2014-15	2015-16
Fees	23,36,66,443/-	24,01,03,930/-	25,11,32,400/-	25,19,99,916/-
Other fees	30,00,216/-	43,47,433/-	52,13,949/-	41,00,419/-
Bank Interest	14,58,154/-	28,32,517/-	28,80,521/-	26,80,336/-
Grants	88,17,837/-	77,01,119/-	47,36,527/-	57,44,017/-
Total	**Rs 24,69,942650/-**	**Rs 25,49,84,999/-**	**Rs 26,39,63,397/-**	**Rs 26,45,24,688/-**

Expenditure:

Details	2012-13	2013-14	2014-15	2015-16
Salary	10,69,48,321/-	11,50,84,874/-	12,21,78,297/-	12,22,49,480/-
Administrative	67,23,595/-	1,06,99,822/-	94,86,038/-	93,74,663/-
Maintenance	53,00,778/-	48,51,168/-	64,71,001/-	75,22,458/-
Miscellaneous	19,41,959/-	18,94,337/-	14,29,706/-	19,30,953/-
Consumable	10,64,903/-	10,51,673/-	16,49,452/-	8,93,681/-
Depreciation	2,01,27,825/-	2,06,17,581/-	2,45,76,018/-	2,18,09,731/-
Grants expenditure	17,49,433/-	1,00,61,815/-	15,26,349/-	11,50,938/-
Equipment	3,48,41,858/-	5,32,81,949/-	5,84,60,424/-	7,73,00,168/-
Total in Rs	**17,19,82,395/-**	**21,75,43,219/-**	**22,57,77,285/-**	**24,22,32,072/-**

6.4.4. Give details on the efforts made by the institution in securing additional funding and the utilization of the same (if any).

Research project proposals submitted have been accepted and received financial grants from funding agencies like AICTE, DST, CSIR, etc.

Vision Group of Science and Technology, VTU has funded for research and faculty development programs. KSCST and ISTE have given financial aid for students' innovative projects.

Project Grants

	2012-13	2013-14	2014-15	2015-16
Income **Rs**	88,17,837/-	77,01,119/-	47,36,527/-	57,44,017/-
Expenditure **Rs**	17,49,433/-	1,00,61,815/-	15,26,349/-	11,50,938/-

Consultancy

	2012-13	2013-14	2014-15	2015-16
Income **Rs**	15,82,352/-	13,42,897/-	21,81,501/-	9,56,023/-

6.5. Internal Quality Assurance System (IQAS)

a) Has the institution established an Internal Quality Assurance Cell (IQAC)? If "yes", what is the institutional policy with regard to quality assurance and how has it contributed in institutionalizing the quality assurance processes?

The institution has established an IQAC during the year 2015-16 with Principal as its chairman and one senior faculty member as the convener. It is represented by staff, students and alumni of our institute.

Dr. K. Murugesh Babu is the convener of IQAC.

b) How many decisions of the IQAC have been approved by the management / authorities for implementation and how many of them were actually implemented?

IQAC reviews institutional processes and provides suggestions for quality assurance. Suggestions made by IQAC are:

Use of innovative teaching methods
Organization of Faculty Development programs/workshops/seminars
Organization of International/National Conferences

Organizing courses beyond the syllabus
Skill training program for students
Students motivation for carrying out live and innovative projects
Research project funding from AICTE, DST etc.
Faculty motivation for higher studies
Faculty motivation for writing text books

A majority of the above suggestions made by IQAC are implemented in our institution like incorporating innovative teaching methods, organizing workshops and conferences, conducting additional courses beyond syllabus for technical updation to become industry ready, membership in professional bodies like ISTE, CSI, IEI, etc.

c) Does the IQAC have external members on its committee? If so, mention any significant contribution made by them.

The institute is planning to have external members from academic and Industry as well.

d) How students and alumni contribute to the effective functioning of the IQAC?

The institution makes a synthesis of suggestions made by the alumni and students. The IQAC will work out plans and programmes from students' perspective which makes it more meaningful.

Alumni give useful suggestions about restructuring the curriculum and the expectations of the industry from academic institutions. They contribute for the progress of the Institute by involving in promoting activities of the Training and Placement, organizing conferences, symposia and workshops.

e) How does the IQAC communicate and engage staff from different constituents of the institution?

The IQAC would solicit valuable suggestions from different constituents of the institution and important resolutions are made and submitted to the Principal and Director. They in turn communicate with staff and alumni, seek the approval of the management and direct the students for proper implementation.

6.5.2. Does the institution have an integrated framework for Quality assurance of the academic and administrative activities? If "yes", give details on its operationalization.

The QAC monitors the quality assurance and the Principal and Director plans out academic and administrative activities through the meetings of the institutional planning body which is responsible for functioning of the college.
The institution has an integrated frame work for quality assurance of academic and administrative activities. It reviews the information received from various departments and administrative activities. The outcomes are discussed in the academic meetings for improvements like, teaching methods, remedial classes

for slow learners. Result analysis is done in every semester after the announcement of university results.

6.5.3. Does the institution provide training to its staff for effective implementation of the Quality assurance procedures? If "yes", give details enumerating its impact.

The institution organizes FDP programs, seminars, workshops, skill development and leadership programs and encourages the faculty to undergo audit courses to enable them to perform audit.

Institution has been accredited by National Board of Accreditation (NBA) three times since 2001. Senior Faculty members are deputed for such programs organized by other institutions. The institute has organized a workshop on "Train the Trainers" jointly with NBA, New Delhi. Heads of department, PG coordinators and senior faculty from the institute and other institutions across the state participated in the program. This enabled the participants to upgrade their skills and ability to evaluate teaching learning process. The outcome of this program resulted in identifying Dr. Subrahmanya Swamy as evaluator for NBA Evaluation Team from AICTE, New Delhi.

6.5.4. Does the institution undertake Academic Audit or other external review of the academic provisions? If "yes", how are the outcomes used to improve the institutional activities?

Local Inquiry Committee (LIC) of Visvesvaraya Technological University (VTU), Belgaum monitors the academic progress of the institution and conducts departmental inspection annually to assess Attendance Register, Syllabus Coverage, Progress Report, Blue-books, work load distribution, faculty academic file, students' feedback, etc.
The institution undertakes academic audit through IQAC by reviewing the plans & progress of staff and students. The outcome of the audit is discussed with management to improve the academic quality and thus overall progress of the institution.

6.5.5. How are the internal quality assurance mechanisms aligned with the requirements of the relevant external quality assurance agencies/regulatory authorities?

The quality of teaching and learning process is monitored by the heads of department and senior faculty regularly. Based on these findings, suggestions are given to the concerned to improve their performance. The external quality assurance is carried by the affiliating university every academic year. The Local Inquiry Committee (LIC) nominated by the university inspects and reviews the academic process and progress of the institute. Feedback is also taken from all stake holders for improvement. Institution also uses guidelines of professional bodies for quality in education, for development of internal quality assurance mechanism. The quality assurance mechanism of the institution is developed based on the guidelines of quality assurance agencies like NBA and NAAC.

6.5.6. What institutional mechanisms are in place to continuously review the teaching learning process? Give details of its structure, methodologies of operations and outcome?

At the commencement of every academic session, it is the responsibility of every faculty member to design the 'Lesson Plan' of the course he/she is supposed to teach. A 'Work Diary' is maintained to note down the daily progress made in the concerned classes. Faculty prepares the course file and progress made towards covering the scheduled lessons are periodically reviewed by the respective HODs. Institution has the mechanism of taking students' feedback to review the teaching learning process. Necessary suggestions are given by the HOD towards fulfilling the plans of teaching within the time frame.

Content beyond syllabus and the co-curricular activities are also organized. Add on subjects both in theory and lab experiments are also carried out. The above process helps in effective delivery of curriculum, development of theoretical and practical skills among the students.

Senior faculty members are appointed as Convener/Chairperson for the different committees such as Academic Committee, Examination Committee and Students' Academic Council to enable smooth functioning of the institution.

With this institutional mechanism by continuous review of teaching-learning process, the college has grown immensely in strength, size and performance over the years.

6.5.7. How does the institution communicate its quality assurance policies, mechanisms and outcomes to the various internal and external stakeholders?

IQAC formulates the quality policies of the institute and communicates with the internal and external stakeholders.

The institution website, student notice board, personal interface with students, parents/guardian meet are the mechanisms of communication to internal and external stake holders.

Distinguished scientists, academicians, alumni and Industrialists are invited on special occasions to interact with students and teaching fraternity which would propagate the institutional profile to the external stake holders.

CRITERION VII

INNOVATIONS AND BEST PRACTICES

CRITERION VII

INNOVATIONS AND BEST PRACTICES

BIET is striving for excellence in quality engineering education through regular monitoring of academic activity, faculty improvement, student satisfaction, extra- curricular activities, and research and industry collaboration. Following are the objectives of the institute to ensure satisfaction of all its stake holders:

To become one of the most progressive and innovative knowledge centers.

To foster effective interaction between Industry and Institute and to impart world class education in Engineering, Management and Research.

To promote industrial consultancy, entrepreneurship, conduct courses and training programmes in collaboration with Industry.

To develop commercially feasible technologies having societal relevance.

To enter into international exchange programmes with prominent educational institutes and Universities.

To nurture students as citizens with moral, ethical and social values enabling them to discharge their obligations towards the industry and society.

Institute motivates faculty members to take up research projects. There are 43 doctorate faculty members in the institute and many of the faculty members have registered for Ph.D. and are pursuing research. Faculty members attend various workshops which in turn help them in self-growth and proper delivery of syllabus to students.

Eminent personalities from various industries are invited to the institute for delivering lectures and interacting with students. Some of the final year projects are carried out with the technical assistance from the industries. The institute regularly interacts and takes feedbacks from the industries. Experts from industries and other organizations work as evaluators in the technical activities organized by the institute. This institute has ISTE and CSI Chapters.

Also the institution has active interactions with various industries and organizations shown below:

National Aeronautical Laboratory, Bangalore
ISRO.
Karnataka Remote Sensing Application Centre
Nano RAM Technologies, Bangalore
University of Agricultural Science, Dharwad
Davangere University.
Natural Remedies.
BEL, Bangalore.
Central Silk Board.
Biozeen, Bangalore.
CFTRI.
Lab land biotech, Mysore.
IOE, Mysore University.

IBM.
IESA collaboration labs
Krishi Vignana Kendra, Davangere
Acumac Machine tools, Bangalore.
UCAM industries, Bangalore.
Cargill India Pvt.Ltd., Belludi, Harihar (Taluk), Davangere.
M/s Indian Cane Power Ltd., Unit: Samsons distilleries, Duggavathi Village, Davangere.
Shamanur Sugars Ltd. Duggavathi Village, Davangere .
Synthite Industries Pvt. Ltd.
Skanda Life Sciences Private Limited, Bangalore.
Laxmi Genchem Sciences Pvt Ltd., Hyderabad.
Central Dogma Pvt.Ltd., Pune.
Biozeen- Bangalore Biotech labs Pvt.Ltd., Bangalore.
Davangere Sugars Co.Ltd., Kukkuwada, Davangere.
College of Dental Sciences, Davangere.
Applied Cognition Systems Pvt. Ltd., (APCOG Systems), Bangalore.
Infosys Campus Connect.
IBM Academic Initiative.
EMC^2 Academic Alliance.
VMware IT Academy program.
Sri Mukesh Patel School of Technology, Management and Engineering.
M/S ASKAR MICRONS, Mysore.
DHIO Research and Engineering, Pvt. Ltd. Bangalore.
Trident Tech Labs Pvt. Limited.
M/s EdGate Technologies Pvt. Limited.

The present focus of the institute is to improve the laboratory infrastructure by bringing new industry relevant technology to enable higher level of learning in students, foster integrated learning by providing multiple industry relevant interfaces, enable students to take up industry relevant projects and encourage faculty to take up research by providing ability to add customer logic. IBM has supported the activity with establishing Software Centre of Excellence. Efforts are on the way to get state government assisted New Age Incubation Centre (NAIN).

7.1 Environment consciousness

7.1.1 Does the Institute conduct a Green Audit of its campus and facilities?

Bapuji Institute of Engineering and Technology (BIET) has a lush green campus spread over an area of 63 acres providing the state of art infrastructure and facilities. The institution regularly monitors upkeep of the campus facilities and conducts an informal green audit of the campus. The following aspects of the campus are monitored regularly to ensure a green campus:

Collection, proper disposal and effective recycling of waste.
Proper maintenance of the planted trees, turf and roads in the campus.

Oxygen rich environment is maintained and various plants including fruit bearing, flower bearing and medicinal plants are grown in the campus.

Proper care is taken for optimum utilization of electricity and water.

Planned to introduce solar power generation in the campus.

Campus photographs

7.1.2 What are the initiatives taken by the college to make the campus eco-friendly?

Energy conservation

This institution is designed in such a way that every room has proper ventilation and natural lighting so as to minimize the usage of electric lights, fans and air-conditioners during the day thus reducing consumption of electricity.

Tube-lights and CFL bulbs are used inside the campus for bright light and lower consumption of electricity. It is also planned to introduce LED lights for further reduction in the consumption of electricity.

Outdated equipments in the laboratories of all engineering disciplines in the institute are being replaced with the latest equipments to avoid higher consumption of electricity.

All computers, UPS backups and the electrical appliances are periodically inspected and serviced in order to maximize the efficiency of the appliances and minimize the power consumption.

All the students and faculty members are instructed to utilize electrical power only when required.

Use of Renewable energy

Food waste collected from institute boys' and girls' hostels is used to generate cooking gas in the hostel kitchens, through a bio-methanation plant designed by Dept. of Mechanical engineering.

Bio-methanation plant

Department of Chemical Engineering extracts Biodiesel from the paddy husk from and is being tested in small vehicles.

Institute campus has solar street lights.

Solar hot water facility is available for the students of both boys and girls hostel.

Solar hot water setup

Solar street lights

Generator Facility

Water harvesting

The gradient of the flow of the rain water is designed in such a way that all the rain water in the campus will be collected in one open well. This helps in recharging the ground water level in the bore wells of the institute.

The drainage water inside the campus is redirected to one open pit so that it helps not only recharging the bore wells but also helps in recycling it for the growth of plants in the campus.

Water harvesting system

Efforts for Carbon neutrality

All departmental buildings in the campus are surrounded by trees and lawns.

A strict ban is imposed on the usage of cigarettes and tobacco products within the campus.

Strict directions are given to the staff and students to park their vehicles in the indicated parking areas.

All CRT monitors have been supplanted with LCD and LED monitors.

Dead leaves and waste papers are not allowed to be put on fire in the campus. These are converted into vermicompost.

Proper maintenance of air conditioning systems, employing solar hot water systems, use of electricity only when required, encouraging students to use public transport system are some of the efforts in the direction of carbon neutrality.

Vermicomposting

The institute gives priority for growing trees in the campus. Water supply for plantation in the campus is planned in such a way that trees and lawns receive sufficient water throughout the year. The institute has a nursery to grow fruit and flower bearing plants. Generally whenever dignitaries visit the campus, they plant a sibling as a mark of their visit to the institute.

Distinguished guests planting the siblings

Hazardous waste management

Biodegradable waste produced by departments of Chemistry, Chemical, Biotechnology and from campus hostels is collected at one place and red soil is spread over this to convert this into effective manure to be used for existing and new plants in the institute. Non biodegradable waste in the form of plastics, rusted steel and used papers and books will be disposed for recycling purposes.

E-waste management

Outdated equipment and laboratory consumables from various departments of the institution are collected in one store room and will be disposed at the end of every year. E-waste is collected in a container and disposed of at the end of every year to the vendors of electronic equipment. Outdated computers are sent to schools run by BEA for reuse.

E- waste container

7.2 Innovations

7.2.1 Give details of innovations introduced during the last four years which have created a positive impact on the functioning of the college.

Since its inception, the main objective of the institute is to enhance the teaching and learning skills to higher levels. It is also encouraging both staff and students for enhancing academic standards and set appropriate goals to face the future challenges. Few innovative practices adopted by the institute to create positive impact on the mindset of the stakeholders are:

Administration

Administration is decentralized by the Head of the institution through the nomination of Deans for Academic, Placement & Training, Students' Welfare, Research & Development, Public Relations and Examinations.

Director, Principal, Deans and heads of the department conduct meetings to review progress in policy implementation and for the redressal of the grievances, if any. Principal is the highest academic authority. Deans and Heads of the department are directed by the Principal. Academic committee members are nominated by the Principal at the institute level and by the heads of the department at the department level for academic activities. Heads of the department have operational autonomy at their department level to conduct various events which reflect in their departmental profile. This type of decentralization of responsibilities imbibes leadership quality in them.

Budget is placed at the disposal of the head of the institution. Department heads and Deans help the Principal in preparing the annual budget. Powers are delegated to the heads of the department in organizing workshops, seminars, preparation of class work, distribution of work to the faculty, teaching content beyond syllabus, inclusion of innovative ideas, nomination of faculty members as laboratory in charge, etc. Head of the department prepares the academic schedule of the department in consultation with the faculty members and is assisted by faculty coordinators of various activities related to tests, forum, time table, laboratory activities etc.

The management of the institution gives full freedom to faculty members in presenting their views and suggestions for the development of the institution. Faculties are nominated as members of various committees constituted in the institute like:

Academic Committee
Students Welfare & Academic Council
Quality Assurance Committee
Examination Committee
Doctoral/Research Advisory Committee
Purchase Committee
Anti-Sexual Harassment Committee
Anti-Ragging Committee
Grievance Redressal Committee
Internal Complaint Committee

Senior professors are drawn from various departments to head these committees. Some staff members and senior students are also part of these committees.
Decentralization of administration brings in a lot of transparency and makes everyone feel to be a part of the institute. This kind of participative management technique has resulted in greater cooperation among the various echelons of management and improvement in academic standards of the institute.

Teaching and Learning

Efforts are made by the institute to enable the students to cope up with the design of the curriculum, change in syllabi from time to time to improve their knowledge and academic quality.

Orientation Program: The Institute organizes an orientation program for newly admitted students to understand the engineering curriculum of first year.

Soft skill development courses: Training is provided to students to enhance their soft-skills, group discussions skills, aptitude test capabilities as well as interview techniques. The Institute conducts soft skill development programmes in association with Tata Consultancy Services, Bangalore, Innovations unlimited, Bangalore, FACE, Coimbatore and Seventh Sense, Bangalore.

Enrichment courses: The Institute arranges add-on courses in collaboration with industries, such as workshops and seminars in their related subjects. NPTEL lecture videos are made available to students.

Add-on learning: Every year all departments organize National Conferences, workshops and expert lectures. Students are encouraged to participate in paper presentations and project competitions organized by parent Institutes and other colleges. Training programs related to the domain are conducted by the respecive departments to enhance the professional skills of students.

Industrial Visits: Industrial visits are organized by every department to create awareness among students about the current trends in the industries. Visits to technical exhibitions like International Textile Machinery Exhibition, International Machine tools exhibition, International tool tech exhibition, and visit to the industries like CMTI, NAL, West coast papermills, Varahi Project, Sharavathi power station, Shanthala foundries, Syntheite industries, Kargill, Shahi Exports, Bangalore, Himatsingka Side, Madura Garments, Bangalore etc. are arranged to expose the students to practical pursuits.

Students are given soft skill training programs to enhance their communications skill to perform during the placement. Group discussions are conducted to improve their involvement in co curricular and extracurricular activities.

Financial assistance to students who participate in the seminars and conferences outside the parent institute for technical paper presentations is given.

The institute brings out an annual magazine called “TECHNOWAVE” and a half-yearly news letter “BIETech Voice” providing a platform for the students and staff to express their views on social awareness, educational issues and promote publication of their literature.

Advanced learners are advised to take GATE, GRE, CAT examinations and are guided for pursuing higher studies.

Advanced learners are felicitated with cash prizes and medals at the end of each academic year and the University Rank holders are encouraged with cash awards and certificates.

Internal Assessment of the students

To monitor the students’ progress, institute has the continuous **internal evaluation system** which consists of internal assessment tests conducted in each course. Three such tests are conducted in a semester to assess the performance of students. Improvement tests are also conducted if necessary based on the performance of students. Assessment report (marks obtained in every test) is displayed on notice board of the respective department after every test. Institute communicates the grades, marks obtained in the internal tests to the students regularly. It organizes regular parents and guardians meet to have interaction with students and parents. In a semester three progress reports are sent to the parents, after the first IA test, after the second IA test and at the end of the semester respectively. The report card contains IA marks and attendance in various subjects along with class teacher’s remarks. The university also conducts the written/theory/practical

examination at the end of semester. The academic committee analyses the university examination results for each program. Results of all the branches for the last 4 years are provided in Annexure A-1.

Training Activities

Training activities such as skill development programmes, campus connect soft skills lecture series, communication skills and aptitude based sessions are being conducted every year to prepare the students for campus selections and for direct recruitment in organizations. Training and placement cell initiates in-house training programmes covering group discussions, team building acts and practical sessions for learning new software skills. Details of training programs conducted are furnished in Annexure C-2.

The training activities are planned keeping in mind a holistic approach to prepare the students as confident graduates who can take on the challenges of industries.

Placement

The Institution has an excellent placement cell operating catering to the needs of the students who opt for campus placements. Well-designed employability enhancement programmes, training and placement programs will be conducted for the students and are carried throughout their course of study. This will prepare them for facing the interviews and communicating with the industry experts.

Sl. No.	Year of Study	Training Programme
1.	First Year	1.Feel Employable Programme 2.Communication skill development
2.	Second year	1. Feel Employable Programme 2. Soft skills development
3.	Third Year	1. Focus Academy for Career Enhancement 3. CREA- by Innovations Unlimited
4.	Fourth Year	1.Resume Preparation 2.Group Discussions, Mock Tests, Mock Interviews 3.Coaching for Recruitment and Empowerment of Action 4. TCS Specific Training Programme

Infrastructure Development

Every year, funds are allocated to modernize existing infrastructure and creating new facilities. Funds are allocated based on the needs of the departments in tune with changing curriculum and research. Resources are also generated to add facilities through external funding agencies like AICTE, DST, KSCST, VGST, IT&BT, Textiles Committee, Swiss Development Cooperation, etc.

The institute has seminar halls fitted with LCD projectors and sound system. Along with these, few classrooms are equipped with smart boards. These facilities have been greatly helpful in Placement & Training activities, seminars, group discussions, educating/learning, etc.

In the institute, a new main auditorium with seating capacity of 750 is coming up. Recently constructed "Amrutha" Ladies hostel, "Silver Line" Guest House and a temple- "Shiva Dhyana Mandir" are also located within the institute campus.
A fully furnished auditorium of 300 seating capacity is coming up under Training and Development wing.

Main auditorium (completion stage)

Temple

The Feedback System

As there is paradigm shift from output based education to outcome based education, the teachers are being trained to evaluate the 'outcomes'. This is a transition period for the institute as it is shifting towards outcome based education.

Meetings are conducted on a regular basis involving Management, Principal, Dean-Academics, Heads of Department, and Dean Placement to formulate strategies for achieving learning outcomes by the students. The capability level of a student is generally assessed based on the following parameters:

Evaluation of internal and university examinations results.
Marks in Internal assessments, attendance percentage.
Students participate in different academic activities viz. tutorial, mini projects, solution of numerical problems, quiz, seminar, oral etc. These activities help to assess proficiency of students in application of mathematical and engineering concepts, effective communication skills. This process helps in achievement of learning outcomes.
Teacher monitors the laboratory skills developed by students during practical sessions.
The institution solicits stakeholder perception on its overall quality programs of the education through communications and feedback mechanisms.
Feedback questionnaires are developed to obtain stakeholder opinions on various programs.
Periodic meetings with alumni, parents, visitors, Local Inspection committees, institutions and individuals are opportunities to openly

interact and obtain stakeholder perception on various programs and the overall quality of education.

Suggestion box at departments offers opportunities for stakeholders to freely express their opinions. The consolidated information gathered from feedback obtained from the students helps in getting remedial measures to the issue in consultation with HODs, Principal and Director.

The formats of the feedback from students, Alumni, parents and employers are available in Annexure J.

Counseling and improving the performance of students

One faculty for every 15 students is assigned as a counselor.

Counselor regularly monitors the progress of the student assigned; continual evaluation of the student performance is done and reported to the head of the department.

Counselor involves himself in building up a good rapport with students; other problems related to behavior, stay in the hostel, non-participation in extracurricular and sports activities are also addressed by the counselor.

Progress report is sent to the parents about the performance of the student; this helps to have a better interface with the parents; counselor communicates to the parents about the performance of the students in terms of their attendance, internal marks and involvement in curricular and extracurricular activities.

Many a times, parent's intervention after receiving progress reports has helped the students to correct themselves and be in the main stream.

Faculty Development Programs

Teachers are encouraged to pursue Ph.D. programs.

Teachers are encouraged to take up the research work individually or in collaboration with industries for improving their professional skills.

Institution also conducts faculty development programs for faculty.

Faculty members of various departments are encouraged to participate in national/international conferences, seminars, training programs, and also to organize national/international conferences. Furthermore, faculty members are encouraged to publish their research findings in national and international journals.

Departmental Association Activities

Every department has its own students' forum under which various activities are conducted- arranging special lectures, seminars, technical quizzes, paper presentations, sports and cultural programs with the support of management. These activities inspire the students to learn beyond their prescribed curriculum.

Computerization of Administration

Presently office related correspondences such as establishment, admissions, cash section, exam, stores, scholarship, accounts, salary, projects, and dispatch are being operated with “Admin software”.

Institute is planning to obtain ERP for student and faculty governance, teaching-learning processes and learning management systems. Discussions with TCS ion are in progress to add ERP software.

Center of Excellence

IBM has supported the institute for establishing Software Centre of Excellence. Many of the departments are having potential to become centers of excellence in certain specialized domains of engineering and technology. Efforts are on the way to start incubation centers for supporting startup companies in the institute with funding from state and central governments.

Skill development program under state government funding is already in progress the department of Textile Technology.

7.3 Best Practices

7.3.1 Elaborate on any two best practices which have contributed to the achievement of the Institutional Objectives and/or contributed to the quality improvement of the core activities of the college.

Best Practice-I

Title of the Practice: Project based learning and product development activities with industry interface.

Goal: Promote innovative thinking among students and faculty through their participation in industry related projects; blending technical skill development activities with the academics to enhance their employability / entrepreneurial rating; carry out product/process development to cater to the needs of the industry and society.

Context: There is a growing feeling that the output of the technical institutions in general is not meeting the industry requirements. There is a yawning gap between the quality of the output and the needs of the industry. On one hand, according to All India survey conducted by Aspiring Minds, only 16% to 20% of the engineering graduates are employable. On the other, there is growing demand for engineering professionals and the demand can be to a tune of 500 million in the next decade.

Skill shortage remains one of the major constraints to the continued growth of Indian economy. Based on detailed surveys conducted by various bodies, on the basis of the skill factor analysis, it is said that employers perceive soft skills (core employability skills and communication skills) more important than professional skills. It is stated that higher order thinking skills are severely lacking in technical graduates coming out of engineering institutions.

BIET has to deliver the above said attributes in order to make an impact on the engineering educational map of India. The management has decided to inculcate innovative thinking and promote entrepreneurial qualities to enable our students to utilize those opportunities available to them. A systematic way of implementing these parameters has been followed in all engineering departments and the results obtained are highly encouraging.

Teachers have to be motivated to keep themselves abreast of the technological advancements and participate in active research along with students. This kind of teaching learning environment can be highly beneficial to the institute.

The practice:

Student projects

Sponsoring projects to the students by the industries has become reality these days. Industries around Davangere have shown greater inclination in sponsoring student projects at B.I.E.T. Many of the industries that

have sponsored the student projects have found this activity useful for their own growth. The students are also benefited by getting the much needed shop floor experience in the development and completion of the project.

To bridge the gap between the industry and institution, the students are motivated to approach the industries and get the problems from the industries to be taken up as projects. This also helps the faculty to solve the problems of the industries and update their knowledge. In fact, lot of importance is being given to the quality of the projects done by the students.

Students are encouraged to take up inter disciplinary projects allowing them to get exposed to wider engineering domains. Taking such inter-disciplinary projects will also have a lot of faculty interaction among various departments leading to successful completion of the projects.

Projects undertaken by various engineering disciplines are of industrial importance with research orientation. These research projects provide opportunities for our faculty members to expose themselves to the state of the art research facilities and interactions with specialists in their areas of expertise.

Faculty participation in research

The faculty members are encouraged to submit research proposals for funding to address the socio-technical issues and challenges and also communicate their research findings for publication in the reputed journals. They are also encouraged to actively participate in conferences and seminars so that they can interact with their peers.

The institute has thirteen recognized research centers in various disciplines of engineering and basic sciences. Innovative research activities in these centers help the faculty members to stay in touch with the emerging trends in their areas of expertise which strengthen their problem solving techniques.

As on date, ninety two candidates are working for Ph.D. from research centers of various engineering and basic science streams of this institute. Thirty four candidates of these centers have been awarded Ph.D. degree under VTU and Kuvempu University.

The institution provides resources and funding to the extent possible for those faculty involved in research.

The institution motivates the faculty for doing major and minor projects through funding agencies including AICTE.

Institute is providing state-of-the-art laboratory facilities and E-journal facilities which are essential to pursue quality research. This institute provides foremost care to quality higher education, basic and applied research in emerging fields.

Institute has been striving hard to establish itself as a source of technical know-how for the industries in and around Davangere. It has been successful to a considerable extent in its endeavor. Many of the industries like M/s Shantala grey iron foundry, Shimoga, CMTI, BFW, HMT, ACE designers etc. are having an excellent interaction with BIET.

Research experts, reputed company human resource persons, successful entrepreneurs and talented alumni are invited to deliver lectures during national and international seminars /workshops/conferences/symposia organized by the various departments in the institute to boost the knowledge of the faculty and the students.

Product development centre

Many of the student projects completed had a commercial value. It was felt that at least some of the projects could be taken up further and convert them as commercial products. With this in view and to effectively utilize the talents available with the faculty, a full-fledged **"Product Development Center"** has been functioning in the institute. Product development center (PDC) has been very active right from its inception and has clear-cut objectives.

In view of the recent changes into the outlook of Indian market through liberalization, it has become mandatory for small scale entrepreneurs to develop and sell such products, which can sustain the competition in the open market. PDC of B.I.E.T. helps in developing and upgrading products of such entrepreneurs who do not have an access to the state of art technology and do not possess the necessary information and infrastructure to update the design of products. PDC is equipped with qualified and dedicated faculty and modern machinery required for developing such products. PDC also gets expert guidance from the practicing engineers of neighboring industries.

Karnataka State Council for Science and Technology and Indian Institute of Science, Bangalore, is giving active support to the activities of PDC.

The activities of the PDC are as challenging as those in industries. PDC is handling designing of wide-ranging equipment from rural based to sophisticated ones. The students and faculties concerned are getting a rich experience. Some of the products developed by PDC have been with a total collaboration with the industries concerned. In one case where a vacuum pump was developed, the industry concerned shared 50% of the expenses of building the prototype. The prototype was handed over to that industry after the initial testing. The industry had taken extensive trials and released it to the market after successful completion of the trials.

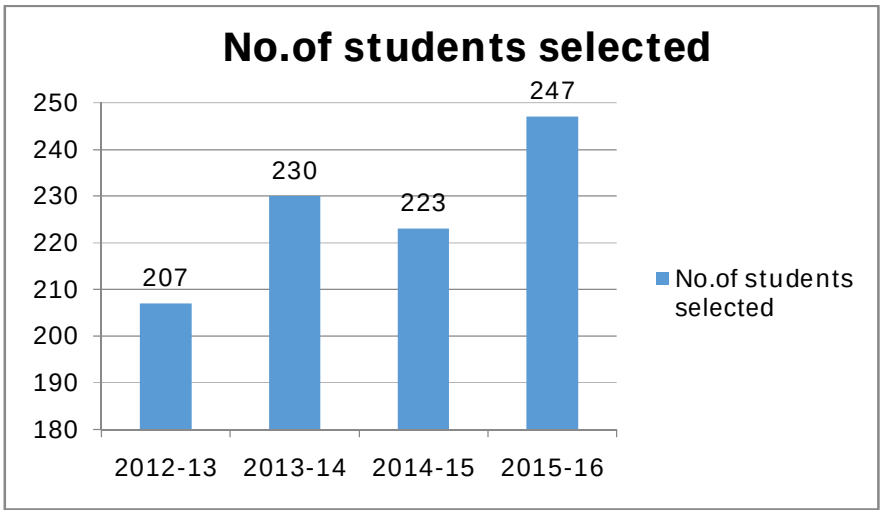
Some of the projects are initiated as student projects. After the completion of the student project, a technical team of PDC comprising of faculty and practicing engineers, will go into the details of the project. Redesigning is carried out looking into the engineering aspects and then a prototype is built. Students are involved during the building of the prototype. Drawings are frozen only after successful completion of the testing of the prototype. The technology will then be handed over to the technocrats who require it.

These activities of the product development have increased not only the confidence of the faculty but also their teaching abilities. The students are also made to participate at various levels of product development by which they acquire the knowledge of how the product development process should be initiated and completed.

Evidence of success:

There has been a steady increase in the number of faculty having Ph.D. There are 43 teachers with Ph.D. at present.

The number of students selected for last four years has been increasing. IT domain giants like Tata consultancy services have taken more number of students every year. Placement details are available in Annexure C-5. Bar chart below shows the details of placements for last four years.



Placement details for last four years

BIET has won the "Best College" award six times in the project exhibitions held by K.S.C.S.T. Nearly fifty projects in the last five years have been exhibited and about fifteen projects have won the "Best project" awards.

Testing, certifications & consultancy

Many departments are engaged in consultancy and the areas of consultancy are given below:

Material Testing, vibration testing.
Water & Air Quality Monitoring.
EIA Studies on Developmental Projects including industries, industrial Area Developments etc.
Design, Execution & Monitoring of Distilleries & Sugar industries, and Pollution Control.
Building Materials Testing.
Textile Materials Testing.
Electrical Motor Testing.

Transformer Oil Testing.
Calibration of Energy Meters.
PVC Pipe Testing.

Revenue Generated Through Consultancy & Testing (Last 5 Years)

Civil Engineering : Rs.1.00 Crore
Mechanical Engineering: Rs.3.31 Lakh
Electrical Engineering : Rs.0.75 Lakh
Textile Technology : Rs.2.50 Lakh

Skill development program under state government funding is already in progress the department of Textile Technology. Rs. 75 lakh has been sanctioned by the Dept. of Textiles, Govt. of Karnataka for conducting skill development program in various domains of textile processing.

Many of our students have become successful entrepreneurs. The names of only few of them are given below.

Sl. No.	Name of the Student/Alumni/Faculty entrepreneur	Graduating year(applicable for student/alumni)	Name of the company incubated
1	Gourishankar Karoshi	2010(BT)	Yogi Farms, Dharwad
2	Karthik K. N.	2009 (CSE)	Tutorialspoint.com
3	Prashanth Y.	2011 (CSE)	Myofficecab.in
4	Venkatesh P.	2013 (CSE)	Phixin Technologies
5	Akhilraj G.	2010 (CSE)	Success world
6	Kumar N	2012 (E&E)	E Square Solutions
7	Suman	2012 (E&E)	E Square Solutions
8	Nagaraj	2012 (E&E)	E Square Solutions
9	Manoj Kumar P.B	2013 (E&E)	Electrica Power Solutions
1	Ajith Kamat	1991-92 (ECE)	HiTech Electro componenets Tarihal, Hubli
2	Vinod Kumar AS	1991-92 (ECE)	iNube Software Solutions Pvt. Ltd, Bangalore
3	Karthik Kashetter	2003-04 (ECE)	Kashetter Group of firms, Davangere
4	ShivaKrishna H R	2007-08 (ECE)	VIP International students, Bangalore
5	Shivakrishna T	2012-13 (ECE)	TrackNPay, Bangalore
6	Venkatesh Devale	2013-14 (ECE)	Weloft Labs, Bangalore
7	Prasanna AV	2013-14 (ECE)	Vidvath Technologies, Bangalore
8	Shivsagar Devpunje	2013-14 (ECE)	Magnetron Technologies Pvt. Ltd, Bangalore
9	Vinayak Kabbade	2015-16 (ECE)	Organic Arogya Bazar, Davangere
0	Prasad S K	2003-04 (ECE)	MaMinno Technologies, Bangalore
11	Goutam V. Hegde	2011 (ISE)	ALT Commerce at New Delhi
12	Malatesh S. Tahasildar	2012 (ISE)	Aryabhata public school, Ranebennur
13	Jyothrilingappa	1995 (MECH)	Fine Plastics, Bangalore.
14	Halaswamy	1993 (MECH)	Magod Lasers, Bangalore
15	Chandrashekar	1986 (MECH)	Shantala Foundries, Shimoga

Sl. No.	Name of the Student/Alumni/Faculty entrepreneur	Graduating year(applicable for student/alumni)	Name of the company incubated
16	Sachin K S	2009 (MECH)	NEXUS Engineering Bangalore
17	Aravind Belludi	1994 (MECH)	AS Precision Gears Pvt. Ltd., Bangalore
18	Shreyas G Vernekar	2015 (MECH)	ROVE LABS, HSR Layout, Bangalore.
19	Mahadevaiah M.S	1995 (MECH)	Indus Vegpro Pvt. Ltd., Davangere
20	Paramashekarappa.T.N	1995 (MECH)	Eshwarr Steel tech Pvt. Ltd., Shimoga.
21	Chandrashekar M.D	1990 (MECH)	VTECH Fabricators, Davangere
22	Ramprakash	1993 (MECH)	Sahara Solutions, Bangalore.

Some of our students have become Corporators and Mayors of Davangere City Corporation.

Mr. Ramesh Shivanahalli, Alumnus of Department of Mechanical Engineering.

Mr. Dinesh Shetty, Alumnus of Department of Civil Engineering.

Mr. Nagabhushan, Alumnus of Department of Mechanical Engineering.

Training and workshop for faculty and students on various IBM tools and technologies like, DB2, RAD, RFT, RTC, Tivoli, Lotus and IBM Bluemix and Watson Analytics. IBM also facilitates the online certifications for the students and faculty who have undergone the training and hands-on session. IBM hosts “The Great Mind Challenge” a software development contest every year for the partnering colleges. Students can take up the ideas given by IBM and have to work on it to achieve the goal using IBM tools and Technology. Students of Computer Science and Engineering take up the challenges in a batch of 3 to 4 members and work on it. Since 2006, every year, students have done very well and won the prizes. The details are given in the table below:

Sl. No	Name of the Students	Project title	Award Category	Year
1.	Tejas Jain Veda Shindhe Shwetha K M BharathSanmani	General Hospital management System	Top ten projects	2006
2.	Prashanth Y Prakruthi Ashwini G Poonam	e-prison Management	Top 20	2011
3.	Gautam P Bhimasen.V.Purohit Adarsh s Pragati P M	e-health care	Top 15	2012
4.	Latesh AnjanaHuliraj Tanushree Prakash Shubhamlohia	24/7 Medisurance	First Prize	2013
5.	Adithyaladwa	Twitone	Top 15	2015
6.	HanumantappaBudihal Md. Abrar	Complaint box	Top 15	2015

Sl. No	Name of the Students	Project title	Award Category	Year
7.	Neetu M N Priyanka D Shetty Sushmitha R S	RedAlert – App to Help the	3rd prize Winner- all girls team	2015
8.	Maruthi K m Megha Keeerthi	Lifesaver – Blood donation App	Top 15 Project	2015

A number of student projects, having a strong potential to be converted to commercial products, have been taken up by the product development center and successful products have been developed. The list of the products/processes developed over the years is given below:
Silk hank dyeing machine, Fabrofeel, Vacuum pump, Steady rest for grinding applications, Thermal cutting of glass, Pedal operated silk reeling machine, Sow box for power loom, Silk knitted products, Bio fuels, Health care research, environmental impact assessment etc.

Many of the faculty members have R & D projects sponsored by leading National and International agencies. Quite a number of faculty members are active industrial consultants and are engaged in development of software, processes, prototypes, and products.

The total external funding for research and development from various funding agencies is around Rs. 2.75 crore. This itself is a testimony to the fact that BIET has always been very active in the area of research and development.

Four student teams from computer science and IS departments have been short listed for final competition of National Hackathon Championships.

Problems encountered:

More facilities and state of art laboratories need to be developed to take the research activities to a higher plane.
To develop more expertise, it is essential that BIET should have more interactions with institutes of repute both in India and abroad.
Institute funding for research, in addition, the funding from the other agencies need to be enhanced.
At present, Alumni interaction is not up to the expected level. This needs to be improved in order to increase alumni participation in academics, training and placement.
The spectrum of industries with which BIET has MOU's is concentrated in the domain of Mechanical, Biotechnology and Computer Science. There is need to increase industry participation in other domains also.
There is no mechanism by which BIET can help students who have been successful in getting placed in industries to obtain gainful employment after their graduation. There is a need to start "finishing school" in the institute to help such students.

The activities of the product development center are listed in the next few pages.

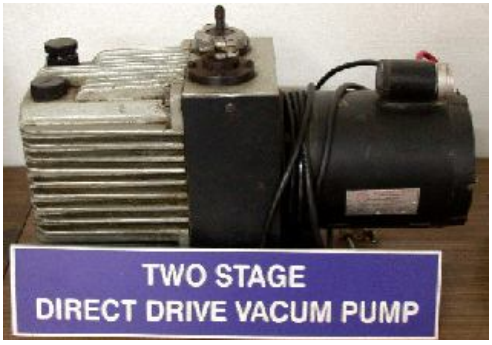
Activities of product development centre

Some prestigious products developed by PDC:

1. **Surakshith Document Laminator:**

First product to be developed in the year 1993 in association with Karnataka State Council for Science and Technology.
Cost of the Project: Rs. 12,000=00
Project completed by students and faculty of Mechanical Engineering.

2. **AVAC Two Stage Direct Drive Vane type Vacuum pump:**



This pump was developed for M/s Associated Vacuum engineering, Mysore. This project was sponsored by both M/s Associated Vacuum engineering and Karnataka State Council for Science and Technology.

Cost of the Project: Rs 60,000=00
Project completed by students and of Mechanical Engineering.

3. **Improved Sizing Machine:**

This project was sponsored by Departm of Science and Technology New Delhi and Karnataka State Council for Science and Technology, Bangalore.

Cost of the Project : Rs. 4,00,000=00

Project completed by faculty and students of Mechanical and Textile engineering

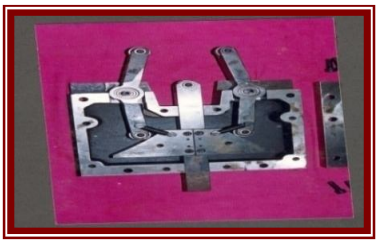
4. **Direct Cottage silk Reeling Machine:**

This project was sponsored by Department of Science and Technology New Delhi and Karnataka State Council for Science and Technology.

Field Testing of this machine was done at various reeling clusters like Doddaballapur, Vijayapur,
B. R. Hills, etc.
Cost of the Project: Rs. 7,00,000=00

Project completed by faculty and students of Textiles and Mechanical Engineering.

5. Hydraulic self centering steady rest for grinding applications:



The development of this product was an integrated effort tween M/s Mysore Kirloskar Ltd. and Product Development Cell of BIET.
This is an import substitution product. **Cost of the Project: Rs. 40,000=00**
Project completed by students and faculty of Mechanical Engineering.

6. Design and development of Silk Hank dyeing Machine:

This project was taken in association with an international agency – Swiss agency for development and co-operation, India under the SERI 2000 program. Prototypes of 2kg and 5kg capacity have been field tested at various clusters and designs have been frozen. **Manufacturers were identified and technology has been transferred to two manufacturers –one at Mumbai and the other at Harihar.**

Cost of the Project: Rs. 30,00,000=00

2 kg Hank dyeing machine with fire wood heating system

5 kg Hank dyeing machine with LPG heating system

Project completed by students and faculty of Textiles and Mechanical Engineering.

7. 'Fabro feel ' – An instrument to measure the handle of a fabric.

This is a novel instrument developed by the PDC to measure the "Hand" of various types of fabrics. Sponsored by Karnataka State Council for Science and Technology and AICTE.

Cost of the Project: Rs.700000=00

Project completed by students and faculty of Mechanical Engineering, Textiles, and Instrumentation Technology.

8. **CNC X-Y Table:** This is another product developed by PDC in association with M/s Mysore Kirloskar Ltd., Harihar. This employs stepper motor controlled slides with Seimens controls. This table was employed for cutting plate glass using hot air jet.
   Cost of the Project : Rs. 4,00,000=00

X-Y Table

Glass specimens cut using hot air jet

Project completed by faculty and students of Mechanical Engineering.

9. **Optimization Knitting parameters of silk knitted fabrics.**

This project was sponsored by Swiss agency for development and co-operation to develop knitting techniques using cottage basin silk. Silk knitted garments were produced for the first time in India using cottage basin silk. Silk knitted "Ties" have impressed many users and the technology has been demonstrated to many potential garment manufacturers at Tirpur, Delhi and Ludhiana.
Cost of the Project: Rs. 15,00,000=00

Project completed by faculty and students of Textiles Engineering.

Silk Knitted Garments

Silk Knitted Ties

10. **Some survey projects carried out:**

Sponsored by SDC:
1. Bapuji Handle Evaluation System : **Cost of the Project: Rs. 1,50,000=00**
2. Hank Dyeing machine : **Cost of the Project: Rs. 1,50,000=00**
3. Cheese Dyeing Machine : **Cost of the Project: Rs. 1,40,000=00**

Project completed by faculty of Mechanical and Textile engineering

Sponsored TERI (Tata Energy Research Institute)
A survey of dyeing units in South India with reference to energy consumption and possible uptake of wood gasifier technology.

Cost of the Project: Rs. 1,40,000=00

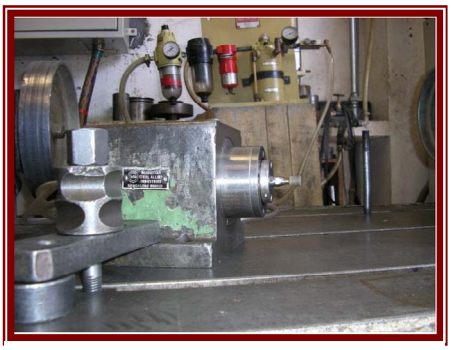
Project completed by faculty Mechanical and Textile engineering

11. **Development of Granite epoxy Machine base for an internal grinding machine:**
This entire work focused on design and development of a granite epoxy composite base for an internal grinding machine ZETTO-30 manufactured by Acumac Machine Tools, Bangalore. This research work very clearly brings out the effectiveness of optimized granite epoxy composite as a structural material for high speed precision machine tools. The experiments conducted have proved without any ambiguity the suitability of this material in terms of strength, stiffness, vibration and thermal characteristics for precision machine tool bases and can be a better substitute for cast iron.

Cost of the Project: Rs. 75, 000=00
Project was sponsored by Institution of Engineers (I).
Project completed by faculty and students of Mechanical Engineering.

12. **Some industry related products developed in association with leading industries:**

Internal grinding machine with HF spindle and Granite epoxy base (Developed in association with M/S Acumac Machine tools, Bengaluru)



60000 rpm HF internal grinding spindle

Cost of the Project: Rs. 7, 50, 000=00
Project was sponsored by AICTE
Project completed by faculty and students of Mechanical Engineering.

13. **Development of granite epoxy base for a thread grinding machine being developed by UCAM Industries, Bengaluru.**
Based on the success of the development of internal grinding machine, UCAM industries, Bengaluru, tied up with BIET to develop the machine base with granite epoxy composite. This project was completed by offering consultancy to the industry. This machine base weighs 2.5 tonnes.

GRANITE EPOXY MACHINE BASE FOR THREAD GRINDING MACHINE

Solar Fabrics:

A wearable solar jacket consists of photovoltaic solar cells which are embedded on it and provided with a precise storage bank that is used as a chargeable device for a high – end mobile phones, i-pads, tablets etc.
This jacket is portable, flexible and versatile.
Apart from the technology involved, it also has a balance on the comfort properties of the jacket.
The solar garment can be used with less harm to the human body since it is made of materials like terry wool, printed cotton and velvet which not only enhances the comfort but also provides better design to the garment.

Solar Jacket

Fabrics made of Bamboo fibers:

Bamboo is a natural fiber. It is well known for its excellent comfort properties and natural antimicrobial properties. The department has undertaken a project on the design and development of 100% bamboo and bamboo/cotton, bamboo/polyester fabrics for various apparel and medical applications.

Optimization of cellulosic ethanol production from Feed stocks:
This project was sponsored by VTU and the work was taken up in collaboration with Sugarcane industries and IIsc.

List of some on Going Research Projects in the institute:

Department of Computer science

Novel Approach to formulate zone parameters to improve the crop yield using remote sensing the data for precision agriculture.

The project is a blend of technology and agriculture; the use of remote sensing instruments and crop yield analysis will help in understanding soil parametric values to enhance the yield of the crop. This is sponsored by VGST.

Department of Biotechnology

"Socio Economic Development Of Through Vermicomposting And Beekeeping In Davangere District".

Fermentative Production of Microbial Cellulose.

Atmospheric Microbial Diversity with Particular Reference To Allergic Pulmonary Infections In Davangere.

Airborne Bio contaminants And Their Association with Asthma, Respiratory Infections and Genetic Pre-Disposition.

Department of Mechanical Engineering

Development of Piezoelectric Direct Injection for Compression Ignition Engine Working on Bio Diesel Produced from Waste Pupae-a Byproduct of Silk Reeling Industry.

The Study of Thermal conductivity of thermal energy storage using different PCMs and to improve efficacy of solar thermal systems and wind energy systems.

Development of high frequency milling spindle and evaluation of its dynamic stability- Project sponsored by AICTE and is being carried out in association with ASKAR Microns, Mysore.

Department of Chemical/ Mechanical Engineering

Production Characterization of Biodiesel from pupae- A byproduct of silk reeling industry and Engine performance analysis & emission characteristics of CRDI Diesel engine.

Investigation on conversion of flower wastes into bio-ethanol and performance evaluation on single cylinder IC engine.

Best Practice-II

Title of the practice: Counseling and skill development programs for students.

The students joining BIET are more often from rural background and need assistance to improve their learning skills, communications skills, technical skills and personality developments. With this objective in mind, the student-teacher interface is strengthened through monitoring of both teachers and students.

Goal: Primary objective of this practice is to create a conducive teaching-learning environment enabling both students and teachers to deliver their best. Students counseling should create confidence in them and should equip them to face the academic challenges in an efficient way.

Context: The management is committed to provide the best possible education to its students. BIET has understood the importance of imparting a broad based education through which one can stand on one's own legs and contribute meaningfully to the development of science and technology in particular and society in general.

The Practice

Student Counseling:

One faculty for every 15 students is assigned as a counselor. Counselor regularly monitors the progress of the student assigned; continual evaluation of the student performance is done and reported to the head of the department.

Counselor involves himself in building up a good rapport with students; other problems related to behavior, stay in the hostel, non-participation in extracurricular and sports activities are also addressed by the counselor.

Progress report is sent to the parents about the performance of the student; this helps to have a better interface with the parents; Counselor communicates to the parents about the performance of the students in terms of their attendance, internal marks and involvement in curricular and extracurricular activities.

Many a times, parent's intervention after receiving progress reports has helped the students to correct themselves and be in the main stream.

Students performing below the expected level are identified by the counselors and remedial classes are conducted to bring them on par with their peers.

First year students attend orientation program in the beginning of the first year classes; the students will be advised on various matters like institute timings, course content, faculties available in various departments, library facilities, contact persons, internet facilities, sports facilities, student activities, etc.

Students are also advised to participate in activities pertaining to NCC, NSS, Lead Cell, cultural club, etc.

First year students have science forum through which they can efficiently showcase their talents.

Every department has a forum which provides an excellent platform to showcase the talents of the students and encourage them to develop technical skills, soft skills, and teamwork.

Students are encouraged to participate in society related activities like blood donation camps, Swachh Bharath Abhiyan, Constitution day, National science day, Sadbhavan Divas, VTU youth festival, etc.

Student Training programs:

Departments conduct skill development programs to enhance the technical skill sets of students and encourage students to undergo internship/ vocational training in industries in and around Davangere and other industrial clusters pan India. The details of the skill development programs conducted by different departments are available in Annexure C-1. The details of the industries where our students have undergone internship are available in Annexure C-4.

To expose the students to the latest technological trends and developments, experts from the industries and distinguished alumni are invited to institution to deliver technical talks and conduct workshops. Invited talks from technical experts (scholars) for the last three years are available in Annexure F-1. The details of various resource persons who visited the institute (department wise) are available in Annexure F-4.

Training and placement cell conducts a number of programs related to development of soft skills, analytical abilities and technical skills. Many students participate in these programs. These training programs are planned in such a way that the students' progression is gradual in learning the skill sets listed above. Professional Trainers are employed to conduct these programs. The programs conducted regularly (year wise) are shown in the table given below:

Sl.No.	Year of Study	Training Programme
1.	First Year	1.Feel Employable Programme 2.Communication skill development from professional trainers
2.	Second year	1. Feel Employable Programme 2. Soft skills development
3.	Third Year	1. Focus Academy for Career Enhancement 3. CREA- by Innovations Unlimited
4.	Final Year	1.Resume Preparation 2.Group Discussions, Mock Tests, Mock Interviews 3.Coaching for Recruitment and Empowerment of Action 4. TCS Specific Training Programme

The details of the programs conducted by the professional trainers are given below:

Year	Events	Dates	No. of participants	Name and addresses of training company/industry/ group/ individuals
2016-17	**FACE**-Focus Academy for Career Enhancement	13-8-2016 to 18-8-2016	280	Focus Academy for Career Enhancement - 12, Lakshmi Nagar, Avinashi Road, Coimbatore – 641014 © I U Training Services, 744, 12th Main, 6th Cross, 5th Block, Vidyaranyapura, Bangalore – 560 097
	CREA - coaching for Recruitment and Empowerment of Action	19-2-2016 to 24-2-2016	344	
2015-16	**FACE** - Focus Academy for Career Enhancement	13-08-2015 to 18-08-2015	420	
	CREA - Coaching for Recruitment and Empowerment of Action	23-9-2015 to 27-9-2015	240	
2014-15	**FACE** - Focus Academy for Career Enhancement	19-09-2014 to 24-09-2014	220	
	CREA - coaching for Recruitment and Empowerment of Action	27-03-2014 to 30-03-2014	240	
2013-14	**FACE** - Focus Academy for Career Enhancement	01-8-2014 to 10-8-2014	390	

Feedback

Result analysis is carried out after the announcement of results from university. Steps are taken to find out the reasons any poor results which facilitate to make corrections in the teaching methodologies of the staff concerned.

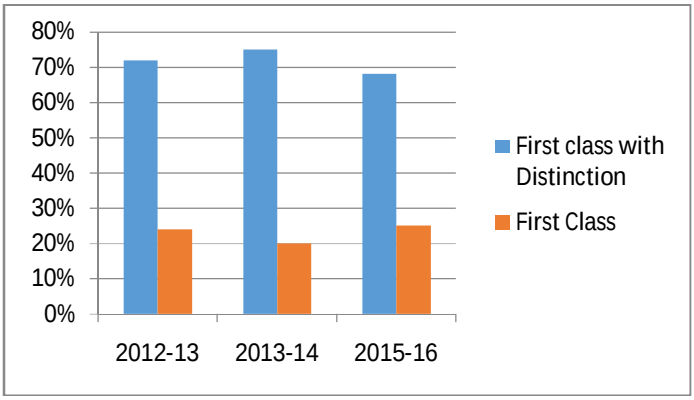
Feedback is taken from the Institute Alumni Association, Parents and other stake holders to obtain their views about the curriculum and facilities available to the students and their suggestions are analyzed and many of these suggestions are implemented.

The faculty members of the college keep interacting with their counter parts at the affiliating university regularly and get latest information regarding subjects taught by them. Because of the wide internet facility in the institute faculty members visit the university portal regularly to know the latest changes in the syllabus.

Evidence of Success:

There have been consistent results over the last three years. The average result of final year is more than 90%. The results analysis of final year students for the last three years is shown in the bar chart. The percentage details of the students passed with first class and with distinction are shown.

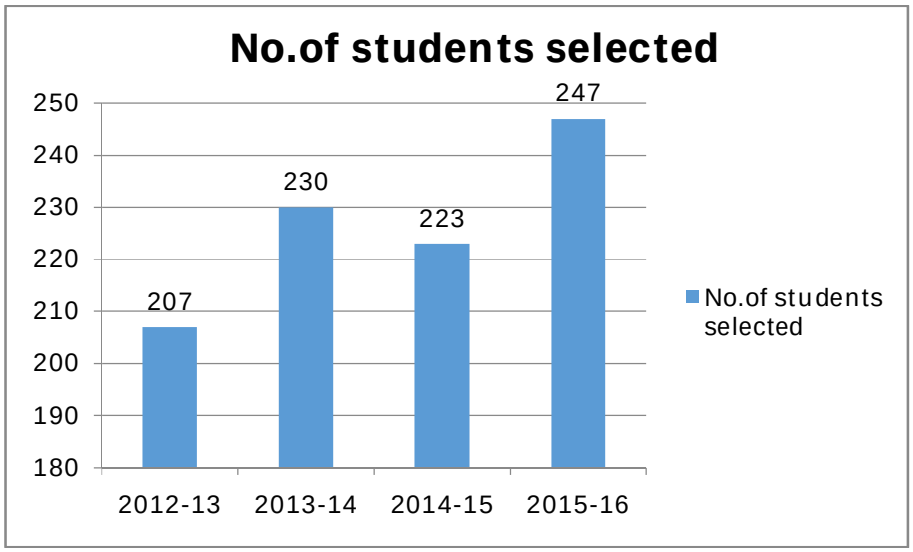
(First class with distinction- ≥ 70% marks; First class ≥ 60% ≤70% marks)



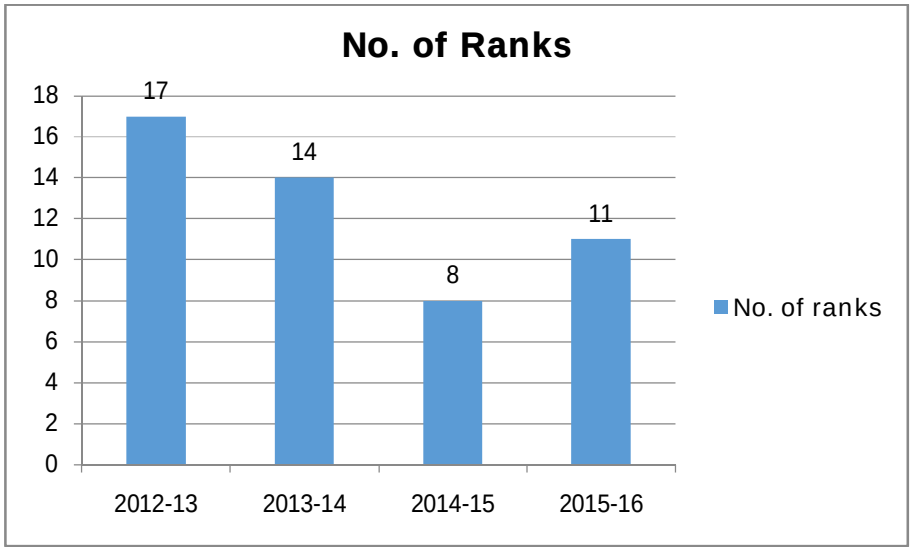
Result Analysis

Year	2012-13	2013-14	2015-16
First Class with distinction	72%	75%	68%
First Class	24%	20%	25%

There has been a steady increase in the number of students placed in various companies.



Every year, the institute has been able to obtain on an average of 10 university ranks consistently. The details of the ranks obtained year wise since last four years are given in the bar chart:



Students attend number of Community based programs like Blood donation camp, participation in Swachh Bharath Abhiyan, NSS activities etc. They have been sensitized. The details of the programs conducted are given in **Annexure H-1.**

Our students are actively participating in **"Smart city"** activities conducted by Davangere City Corporation.

Problems encountered:

The quality of students entering into the institute has a lot of bearing on the overall performance of the students. Students with rural background, weak fundamentals in science, and poor communication skills in oral and written format, no back ground of soft skills are entering the institute.

It really is a tough task to prepare them as competent engineers.

The participation from the students is poor in making teaching –learning process more interactive despite a lot of encouragement being given. A good percentage of students do not break the ice and participate in the student centric activities.

To motivate all teachers to involve in research and other related activities is found to be difficult as quite a number of faculty have shown lesser inclination for activities other than regular teaching.

Sri. A.C.Jayanna
Chairman, BIET & Treasurer, BEA

Prof.Y.Vrushabhendrappa
Director

Dr. Subrahmanya Swamy.S
Principal

Contact Details:

Name of the Principal	**: Dr. S. Subrahmanya Swamy**
Name of the Institution	**: Bapuji Institute of Engineering and Technology (BIET)**
Name of the City	**: DAVANGERE**
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E-mail	**: principal@bietdvg.edu**

Section D

Part –III

Evaluative Reports of the Departments

BIOTECHNOLOGY

1. **Name of the Department:** Biotechnology.

2. **Year of Establishment:** 2002.

3. **Names of Programmes/Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.):** UG & Ph.D., M.Sc. Engg. by Research

4. **Names of Interdisciplinary courses and the Departments/units involved:** Nil

Sl. No.	Sem	Course Code	Course Title	Dept.
1	I	14MAT11	Engineering Mathematics – I	Mathematics
2	II	14MAT21	Engineering Mathematics – II	Mathematics
3	III	10MAT31	Engineering Mathematics – III	Mathematics
4	IV	10MAT41	Engineering Mathematics – IV	Mathematics
5	I/II	14PHY12	Engineering Physics	Physics
6	I/II	14CIV13	Elements of Civil Engg. & Engineering Mechanics	Civil
7	I/II	14EME14	Elements of Mechanical Engg.	Mechanical
8	I/II	14ELE15	Basic Electrical Engg.	Electrical
9	I/II	14WSL16	Workshop Practice	Mechanical
10	I/II	14PHYL17	Engg. Physics Lab	Physics
11	I/II	14ELN15/25	Basic Electronics	E & C E
12	I/II	14CHE12/22	Engineering Chemistry	Chemistry
13	I/II	14CAED14/24	Computer Aided Engineering Drawing	Mechanical
14	I/II	14CIP18	Constitution of India & Professional Ethics	Civil

5. **Annual/semester/choice based credit system (programme wise):** The UG Programs follow the Visvesvaraya Technological University (VTU) guidelines with Percentage based semester system/CBCS.

6. **Participation of the Department in the courses offered by other Departments:** Nil

7. **Courses in collaboration with other universities, industries, foreign institutions, etc.:** Nil

8. **Details of courses/programmes discontinued (if any) with reasons:** Nil

9. **Number of teaching posts:**

Designation	Sanctioned	Filled
Professors	1	1
Associate Professors	3	1
Asst. Professors	8	9

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D. / M. Phil. etc.,):

Sl. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. students guided for the last 4 years	
						Guided	Guiding
1	Dr. B. E. Rangaswamy	M.Sc., Ph.D.	Prof. & HOD	Aerobiology/ Atms Microbiology	20	Nil	3 submitted 4(Guiding)
2	Dr. Srinivas Reddy Bathula	M.Sc., Ph.D.	Associate Prof.	Medical BT & Bioinformatics	7	--	--
3	Dr. Ravishankar B.V.	M.Sc., Ph.D.	Asst. Prof.	Biosystematics	16	Nil	1 (Co-guide)
4	Dr. Manjunath N.S.	M.Sc., Ph.D.	Asst. Prof.	Microbiology & Immunotechnology	16	--	--
5	Mr. VasudevaNayaka K.B.L.	M.Sc.	Asst. Prof.	Biotechnology	12	--	--
6	Mr. Niranjan M.N.	M.Tech.	Asst. Prof.	Industrial Biotechnology	5	--	--
7	Mr. Amarnath Chitragar	M.Tech	Asst. Prof.	Chemical Engineering	5	--	--
8	Mr. Prakash K.K.	M.Sc. (PhD thesis submitted)	Asst. Prof.	Medical Microbiology	3	--	--
9	Ms. Vanitha K.P.	M.Sc. (PhD thesis ready for submission)	Asst. Prof.	Microbiology	3	--	--
10	Mr. Vinay Kumar Jain	M.Sc. (Pursuing PhD)	Asst. Prof.	Biotechnology	2	--	--
11	Ms. Shruthi S.R	M.Tech	Asst. Prof.	Bioinformatics	1	--	--

11. List of senior visiting faculty: 01

Sl. No.	Name	Institution
1.	Dr. B. G. Pujar	Former Prof. & Head, Dept. of BT, BIET.

12. Percentage of lectures delivered and practical classes handled (Programme wise) by temporary faculty: 50%

13. Student -Teacher Ratio (Programme wise): 15:1

14. Number of academic support staff (technical) and administrative staff sanctioned and filled:

	Sanctioned	Filled
Technical	1	1
Supporting staff	3	3

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG:

Qualifications	No. of Faculties
Ph.D.	04 + 01
M.Tech./M. Sc.	07

16. Number of faculty with ongoing projects from

a) National funding agencies and grants received:

Dr. B. E. Rangaswamy

Sl. No.	Title of the Project	Name of the Funding Agency	Amount Sanctioned in Rs	Project Duration	Status
1	Airborne Bio-contaminants And Their Association With Asthma, Respiratory Infections And Genetic Pre-Disposition	Department of Biotechnology, Govt. of India.	26.50 lakhs	2014-17	On-going
2	Exploration of Bacteria as an alternative source for production of cellulose	AICTE -New Delhi	11.65lakhs	2013-17	On-going

Dr. Manjunath N.S.

Sl. No.	Title of the Project	Name of the Funding Agency	Amount Sanctioned	Project Duration	Status
1	Phages as Natural Nano-Medicines to Target Superbugs (PI) (2014-15)	VGST, Dept. of IT, BT and S & T, Govt. of Karnataka, Bengaluru under the Scheme Centers of Innovative Science & Engineering Education (CISEE)	30 Lakhs	2014-17	On-going

b) International funding agencies and grants received: Nil

17. Departmental projects funded by DST-FIST, UGC, DBT, ICSSR, etc. and total grants received:

Sl. No.	Title of the Project	Name of the Funding Agency	Amount Sanctioned	Project Duration
1	Socio Economic Development Of Through Vermicomposting and Beekeeping In Davangere District	Department of Biotechnology, Govt. of India	13.20lakhs	2008-12
2	Exploration of Bacteriophages as an Alternative to Antibiotics to target the Emerging Multi Drug Resistant Bacteria	VGST, Dept. of IT, BT and S &T, Govt. of Karnataka, Bengaluru	5.0 Lakhs	2012-13
3	Fermentative Production Of Microbial Cellulose"	Department of Science and Technology, Govt. of India	22.40 Lakhs	2012-16
4	Atmospheric Microbial Diversity With Particular Reference To Allergic Pulmonary Infections In Davangere.	Department of Science and Technology, Govt. of India	21.20 lakhs	2012-16
5	Modernization Of Genetic Engg. And Immunotechnology Lab	AICTE, New Delhi	15.74 lakhs	2013-14

Sl. No.	Title of the Project	Name of the Funding Agency	Amount Sanctioned	Project Duration
6	Production Of Bacterial Cellulose	AICTE, New Delhi	12.65 Lakhs	2013-16
7	Airborne Bio contaminants And Their Association With Asthma, Respiratory Infections And Genetic Pre-Disposition	Department of Biotechnology, Govt. of India	26.50 lakhs	2014-17
8	Phages as Natural Nano-Medicines to Target Superbugs(2014-15)	VGST, Dept. of IT, BT and S & T, Govt. of Karnataka, Bengaluru (CISEE)	30.0 Lakhs	2014-17
9	Diversified bacterial and fungal aerosols prevailing bronchio-vascular infections	VGST, Dept. of IT, BT and S & T, Govt. of Karnataka, Bengaluru (SMYSR)	4.0 Lakhs	2014-15

* Completed 22 minor projects sanctioned by KSCST and MoEF

18. Research Centre/facility recognized by the University:
Department is recognized Research Centre from VTU, Belgaum since 2006

19. Publications:

	Numbers
Publication per faculty	7
Number of papers published in peer reviewed journals (national/international) by faculty and students.	69
Chapters in Books	Nil
Books with ISBN/ISSN	3
Citation Index	h-index : 36, 26 i-index: Nil
Number of publications listed in International Database	30
Impact factor	1-4

20. Areas of consultancy and income generated: Consultancy gratis provided in the following areas

Sl. No.	Year	Details of Consultancy done	Revenue generated in Rs
1	2012-13 2015-16	Vermiculture, Vermicomposting and Bee Keeping to farmers	Gratis
2	2013-14 2014-15 2015-16	Providing microbial cultures to neighborhood institutions	Gratis
3	2015-16	Phytochemistry	3,000=00

21. Faculty as members in

a) National committees:

Name	Body
Dr. B.E Rangaswamy	1. Execute committee member IAS, Kolkata 2. Executive committee member, Society for Cytologists and Geneticists in India.

b) International Committees:

NAME	BODY
Dr. B.E Rangaswamy	Member –Aerobiology committee of Asia Pacific Association of Allergy, Asthma and Clinical Immunology (APAAACI)

c) Editorial Boards:

NAME	BODY
Dr. B.E Rangaswamy	1. Chief Editor -Indian Journal of Aerobiology. 2. Member Editorial Board: Biovistas 3. Referee to *Aeriobiologia*,(springer) International journal of Horticulture 4. Expert committee member to scrutinize proposal submitted to Dept. of Biotechnology Govt. of India.,
Dr. Srinivas Reddy Bathula	Journal of Medcrave, Journal PUB

d) SEBI: Nil

22. Student projects:

a. Percentage of students who have done in-house projects including inter departmental /Programme: 75%

b. Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories /Industry/other agencies: 25%

23. Awards/Recognitions received by faculty and students:

Sl. No.	Name of the faculty	Name of the Award	Awarding Authority	Year
1.	Dr. B.E Rangaswamy	P. H. Gregory Award.	Indian Aerobiological Society.	2007
		Best Project of the Year	KSCST	2012
		1 Prize for paper presentation (20,000/-)	KSTA	2012
		Recognition/Appreciation	Received by Former President of India His Excellency Dr. A.P.J. Abdul Kalam office, Received from Prof. CNR Rao, Hon. President, JNCASR, Bengaluru.	2012
		Recognition/Appreciation	Speaker of the State House, Massachusetts USA, Mayor of Quincy, USA, and Governor of Rhode Islands and Providence, USA .	2008
		Paul Harris Fellow	Rotary International	2010
		Recognition	President, Karnataka Rajya Vignana Parishat, Davanagere Dist. Unit	2017-19
		Recognition	Distrct Litracy commite Chair (DLCC) for Rotary Dist. 3160 (for Twelve Revenue distrcts)	2016-2019
2	Dr.N.S.Manjunath	Young Scientist Award	VGST, Govt. of Karnataka	2012-13
		Best Project of the Year	KSCST	2012

Sl. No.	Name of the faculty	Name of the Award	Awarding Authority	Year
3	Mr. Prakash K.K.	P.H.Gregory Award	Indian Aerobiological Society	2012
		I Prize Award for Paper presentation	KSTA	2012
		Young Scientist	VGST, Karnataka Govt. of Karnataka	2014
4	Vanitha K.P	II prize in National Seminar on Microbial Products in Diverse Sectors: Agriculture, Chemicals, Energy, Healthcare and Polymers	Dept. of Biotechnology, Bannari Amman Institute of Technology, Sathyamangalm, Tamil Nadu	2014

Sl. No.	Name of the student	Name of the Award	Awarding Authority	Year
1	Ms. Deepa Revankar	Seventh Rank	VTU-Belgaum	2011-12
2	Neharika RajKamath	First Rank	VTU-Belgaum	2012-13
		First Prize- Participated in "Voice for BT" intercollegiate public speaking contest on Biotechnology at Christ University, Bangalore.	Novozymes South Asia pvt.Ltd	2012
3	Sneha Kagale	Fifth Rank	VTU-Belgaum	2012-13
4	Pavani Naik	Tenth Rank	VTU-Belgaum	2012-13
5	Amrutha S.C	Project sponsored by Karnataka State Council for Science and Technology was selected for oral presentation at state level SPP programme SPP 2012-13 held at SDMIT, Ujire.	KSCST	2012
6	Suhas B.C.	Third Prize in objective test contest conducted in the workshop for Biotechnology students on Research opportunities in Biotechnology & Allied studies	BIET and KSTA	2013
7	Shetty Shaman Sudhakar	Successful completion of SSB selection process	SSB-selection centre south, Cubbon Road, Bangalore	2016
		Selected for NCC SPL entry-40 course	NCC	2016
		Second prize Oral paper presentation	GMIT-Davangere	2015
		First prize Oral paper presentation	BIET-Davangere	2015
		Second prize in Shot-put – Annual Sports Games	BIET-Davangere	2016
		Second prize in Oral paper presentation cogNIEscience	NIE-Mysore	2015
		Second prize Oral paper presentation in CHEMEXCEL	Chemical Engg. Dept., BIET	2015
		First prize Oral paper presentation in TEXPLORA	UBDTCE-Davangere	2015
		Successfully passed Certificate C examination in B Grade	NCC	2014

Sl. No.	Name of the student	Name of the Award	Awarding Authority	Year
8	PoojaV.Bhat AyeeshaSiddiqua	Project sponsored by Karnataka State Council for Science and Technology was selected fororal presentationat state level SPP programme SPP 2015-16 held at BLDE associations Dr.P.G.Halakatti College of Engineering and Technology, Vijayapura.	KSCST	2015
9	Akarsh M.R.	Third Prize in "Voice for BT" intercollegiate public speaking contest on Biotechnology on 18th October 2016, Thanjavur,TamilNadu	conducted by Novozymes South Asia pvt.Ltd,	2016
		Second prize in Oral paper presentation	GMIT-Davangere	2016
10	Nishita S	First place in Fashion fiesta DAVANA-2016	BIET	2016
11	Sheryll Judith D'Silva and Suhas B.C	First place in (III Yr BT) Annual Felicitation function	BIET	2016
		First place in (II Yr BT) Annual Felicitation function	BIET	2015
		First prize in Oral paper presentation in Pleiades 2014	BVBCET-Hubli	2014
12	Chandukishore T	"Best student Award 2016"	ISTE Karnataka section	2016

24. List of eminent academicians and scientists/visitors to the department:

Dr. H.E.Shashidhar, Prof. & AKMU-Head UAS, Bangalore and Formerly Director, Barwale foundation.
Mr. Prasad Patil, Co-founder, Aissel Solutions, Hubli.
Mr. Kshitij Basavaraj, Director, PSK-Pharma, Harihara
Dr. S. R. Niranjana, Vice Chancellor, Gulbarga University, Gulbarga.
Mr. GourishankarKaroshi, 2010 Batch Alumni & Entrepreneur
Padmashree Dr. DeepankarChatterji, Professor, Molecular Biophysics Unit, IISc., Bangalore.
Sri. Basavaraj Kadaramandalgi, Deputy Director, Regional Forensic Science Laboratory-Davangere
Dr. K. Muniappa, Prof. and Distinguished Scientist IISc.,Bangalore
Dr. T. S. Keshava Prasad, Scientist Institute of Bioinformatics, International Tech. Park-Bangalore
Dr. G. Harish Kumar, Scientist D, SERC-Division, Dept. of S & T, Govt. of India, New Delhi.
Dr. Keshav A. Bulbule, Technical Advisor to E-Parisara,Consultant to C-MET,Hyderabad
Dr. K.S.Jagadeesh, Prof. in Agricultural Microbiology, UAS, Dharwad
Dr. S. Shishupala, Prof. and Dean,Davangere University, Davangere
Dr. Ashok Ganesan, Chief Research Scientist Hospira, Chennai
Dr. V. Kumar, Associate Professor Dept. of Biochemistry, Davangere University.
Dr. Basavaraj S. Hungund, Prof. & Head,Dept. of Biotechnology, BVBCET, Hubli

Dr. V. Shyamkumar, Associate Professor, Dept. of Microbiology & Biotechnology, KU, Dharwad.

Dr. A.H. Rajasab, Vice Chancellor Tumkur University, Tumkur.

Dr. T. S. Rao, Senior Advisor DBT Govt. of India New Delhi

Dr.Vishwas A. Bapat, INSA-Fellow, Kolhapur

Dr. Sandhya S.Vishveshwariah, Prof. Dept. of Molecular Reproduction, IISc, Bangalore.

Dr. K.P. Arun Kumar, Scientist & Group Leader Centre for DNA finger Printing, Hyderabad

Dr.Chandrabhas Narayana, Dean, students recruitment and Professor JNCASR, Bangalore

Dr. H Ramakrishnaiah, Professor& Head, Department of Biotechnology, GSC Bangalore

Dr.Nandini M.Ghante, Director IMT-Technologies, Bangalore

Dr. K. P. Srinath, Registrar, Women's University, Vijayapura.

Dr. Ramalingappa, Associate Professor, Dept. of Microbiology, Davangere University

Padmashree Dr. Anil P.Joshi, Himalayan Env. Studies and Conservation Organization, Dehradun

Dr. D. N. Rao, Professor Dept. of Biochemistry, IISc., Bangalore

Dr. G. Shivakumara Swamy, Visiting Professor, Dept. of Biotechnology, Bangalore University

Dr.M.C.Gayathri, Professor, Head, Molecular and Plant biotechnology Unit, Bangalore University

Dr. Jagadish Bhat, Scientific Manager, Gangagen Biotech Private Limited, Bangalore.

PadmashreeDr. V. Prakash, Distinguished Scientist, CSIR and Former Director-CFTRI

Dr.Mittur Jagadish, Head- KBITS Biotech Facilitation cell, Bangalore.

Dr. V. N. Balaji, Scientific Advisory Board Member- Jubilant Biosys, Bangalore

Dr.Ravindra Gudihal, Application Scientist, Agilent Technologies, Bangalore

Dr.Vishnu Prasad Bhatla, Professor, Dept. of Physics, IISC, Bangalore

Dr. R Raghavendra Rao, Emeritus Scientist, CIMAP,(CSIR Lab) Bangalore

Padmabhushan Dr. M. Mahadevappa, Former VC-UAS, Dharwad, Former Chairman-ASRB New Delhi.

Dr. SudhaDevaraj, Scientist, Aristogene, Biosciences Private Limited, Bangalore

Dr. M. Mahadevaiah, Former Deputy Director, CFTRI, Mysore

Dr. G.U. Kulkarni, Professor, CPMU Unit, JNCASR, Bangalore

Dr. Aminabhavi, Senior Scientist, Reliance Industries, Mumbai,

Dr. Kameshwara Rao, Exec Secretary, FBAE, Bangalore

Dr. S Rajashekara Murthy, Scientist Emeritus, Environment, Govt. of Canada

Dr. P. N. Rangarajan, Bhatnagar Fellow, Professor, Dept. of Biochemistry, IISC, Bangalore

Dr. K. Sekar, Prof, Centre of Excellence in Structural Biology, IISc, Bangalore

Dr. D. Manjunath, Associate Professor, Dept. of Sericulture, Mysore University.

Dr. Suryapraksh, Principal Scientist, IISC, Bangalore
Dr.K.K.Narayanan, Managing Director, Metahelix Life Sciences, Bangalore
Dr.Arun Chandavarkar, Chief Operating Officer, Biocon India Ltd, Bangalore
Dr. H.B Singh, Scientist E, DST, Nerw Delhi
Dr. Lakshmi kantham, Deputy Director, IICT, Hyderabad
Dr. Balaram Singh, Head, Botulinum Research center, Univ. of Massachusetts, USA.
Dr. R.R.Sahay, Lab Director, EDL laboratories, Clearwater, Florida, USA
Dr. N. I. Singh, Professor, Manipur University Imphal
Dr. A. B. Singh, Deputy Director, IGIB, New Delhi.
Dr. Shripad N. Agashe, Emeritus Professor, BUB, Bangalore
Dr. Lingae Gowda, SSO, FSL, Davangere
Dr. S.T.Tilak, Formerly Professor, MaratawadaUniveristy, MH
Dr. G.V.Patil, Former Vice Chancellor, Amravati University, MH
Prof Mohan Sundararajan, Noted Science Writer & Speaker: Graphene in nanotechnology
Prof. B.P.R Vittal, Professor Emeritus, Department of CAS in Botany, Madras Univ., Chennai

25. Seminars/Conferences/Workshops organized & the source of funding:

Type of Activity	Nos.	Source of Funding
Seminars	4	University Grants Commission- New Delhi, Karnataka Science and Technology Academy- Govt. of Karnataka, (KSTA) Indian Society for Technical Education- New Delhi
National Conferences	1	BIET-Chapters of Indian Society for Technical Education
International Conferences	Nil	Nil
Workshops/FDPs	6	Visvesvaraya Technological University (VTU) Belgaum, Vision Group on Science and Technology (**VGST**), Govt. of Karnataka Karnataka Science & Technology Academy (KSTA) DST- Entrepreneurship Development Institute of India-Ahmedabad
Subject expert Committee meeting	2	Department of Science and Technology, Government of India,New Delhi

26. Student profile programme/course wise:

Batch	Name of the Course/Programme (refer question No.4)	Applications received	Selected	Enrolled		Pass percentage
				M	F	
2015-16	B.E. – Biotechnology	--	26	5	21	100
2014-15			20	6	14	95
2013-14			33	9	24	100
2012-13			28	8	20	100

Note: M=Male, F=Female

27. Diversity of Students:

Batch	Name of the course	% of Students from the same state	% of Students from the other state	% of students from abroad
2015-16	B.E-. – Biotechnology	92	3.85	3.85
2014-15		100	0	0
2013-14		100	0	0
2012-13		85	15	0

28. How many students have cleared national and state competitive examinations? Such as NET, SLET, GATE, Civil services, Defense services, etc.?

Name of the competitive examinations	2015-16	2014-15	2013-14	2012-13	2011-12
GATE-	1	-	5	-	10
Defense Services-	1	-	-	-	-
Banking			1		1

29. Student progression:

Student progression	Against % enrolled				Total in %
	2015-16	2014-15	2013-14	2012-13	
Under Graduate to Post Graduate	7.7	8.3	1.6	-	17.6
Post Graduate to M.Phil.	-			-	
Post Graduate to Ph.D.	-	1.6	7.7	-	9.3
Ph.D. Post-Doctoral	-	-	-	-	-
Employed					
Campus selection	86.61	15	21	37	59.61
Other than Campus recruitment	1.6	11.6	20	-	33.2

30. Details of Infrastructural facilities:

a) Library:

Particulars	Numbers	
	Department	Central library
Titles	50	520
Volumes	160	2072
National Journals	2	7
International Journals	-	1811
E-Books	-	-

b) Internet facilities for staff &students:

25 Mbps Airtel leased line connection for students and faculty of the institute.

c) Class rooms with ICT facility: 03 classrooms with LCD projector and Internet Connectivity

d) Laboratories:

Microbiology and Genetic Engineering and Immune technology
Cell and Molecular Biology and Upstream Bioprocessing
Biochemistry, Bio kinetics and Enzyme technology
Bioinformatics Lab
Unit Operations lab
Bioprocess Control and Automation lab
Down Stream Bioprocessing
Research and Development lab

31. Number of students receiving financial assistance from college, University, government or other agencies:

Year	Source of Financial Assistance	No. of Students
2015-16	Department of Technical Education GOK.	11
2014-15	MHRD-GOI, Department of social welfare GOK.	3
2013-14		05
2012-13		10

32. Details on student enrichment programmes (special lectures /workshops /seminar) with External experts

Year	Special lectures/ workshops/ seminars	Topic
2015-16	Workshop	Entrepreneurship Awareness Camp During 24th – 26th August 2016
2015-16	Workshop	One week workshop on "New Practical tools on Biotechnological studies", Dept. of Biotechnology & Research Centre, BIET from 18-24thJanuary 2016
2014-15	Workshop	One week workshop Techniques in Biotechnology Hands-on Workshop at Dept. Of Biotechnology & Research centre, BIET from19-24th January 2015
2013-14	Special lectures	Research opportunities in Biotechnology and allied studies. During 19th& 20th Oct. 2013.
2012-13	Special lectures	AICTE Sponsored National Symposium on Advances in Biotechnology , Biochemical Engineering & Career Opportunities in BiotechnologyBiosatum-12 During 11th& 12th May2012

Technical talk by eminent speakers,
Industrial visits.
Technical workshops and seminars in association with professional bodies and industries.
Encouraging students to write technical papers based on their project work and present it in conferences.
Brain storm in house weekly debate competitions
Hands on training in vermicomposting and vermiculture

33. Teaching methods adopted to improve student learning:

Regular Assignments
Expert lectures (subject based)
Power point presentation (PPT)
Special classes for students who needs improvement
Internal Assessment
Student Mentoring and counseling
Industrial visits
Workshops based on specific theme
Seminars for student's presentations.
Technical quiz
Review of Scientific Articles
Scientific Article reference work
General talks to broaden the current developments
Group projects

34. Participation in Institutional Social Responsibility (ISR) and Extension activities:

Blood donation Camps
Awareness programs (regarding use of plastic, smart city)
In-house Beekeeping ,Vermicomposting training to farmers
Environmental awareness campaign in different villages
Organized workshops for high school and puc teachers

35. SWOC analysis of the department and Future plans

Strengths:

MoUs with eight industries and five industries in and around Davangere for students' internship.

Department is recognized as Research centre by VTU offering MSc (Engg) by Research and PhD programme.

Excellent infrastructure for Biotechnology department with a support of management and funding agencies.

Good interdepartmental support from the Department of Chemical Engineering, Mechanical Engg. And Environmental Engg.

Conducive working atmosphere and excellent team work, Updated curriculum for quality education to cater to the needs of the present global arena. Experienced, dedicated and qualified teachers.

Well-equipped laboratories and an in-house Department library with 170 books.

Weaknesses:

The City is away from Bangalore (Biotech Hub) and many talented students prefer to join Bangalore institutes.

The Biotechnology companies are unwilling to come down to Davangere despite the continuous effort by the department.

More industry tie ups required.

Opportunities:

Better engagement with industries to harness expertise and resource for quality enhancement.

Create awareness on the applications of biotechnology among public and concerned groups.

Adopt more innovative methods in pedagogy Increase research activities among faculty and students.

Better Alumni network for tapping more employments for students

Challenges:

Efficient management of Teaching, learning, Research, Extension and administration in semester system

To deal with propaganda against Biotechnology

To develop skills required for National standards

To keep abreast with fast paced innovations in modern biology Promotion of basic and applied sciences in the backdrop of mushrooming professional courses

To enhance the placement opportunities

Future Plans:

To start PG programme
Student exchange programmes with foreign industries
Use of software for teaching- learning and evaluation
Animal tissue culture lab and animal house
To start biotech skill enhancement/finishing school programme

Chemical Engineering

1. **Name of the Department:** Chemical Engineering

2. **Year of Establishment:** 1996-97

3. **Names of Programmes/Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.) :** UG, PG and Ph.D.

4. **Names of Interdisciplinary courses and the Departments/units involved:**

Sl. No.	Sem	Course Code	Course Title	Dept.
1	I	15MAT11	Engineering Mathematics – I	Mathematics
2	II	15MAT21	Engineering Mathematics – II	Mathematics
3	III	15MAT31	Engineering Mathematics – III	Mathematics
4	IV	15MAT41	Engineering Mathematics – IV	Mathematics
5	I/II	15PHY12/22	Engineering Physics	Physics
6	I/II	15CIV13/23	Elements of Civil Engg. & Engineering Mechanics	Civil
7	I/II	15PCD13/23	Programming In C and Data Structures	CS & E
8	I/II	15EME14/24	Elements of Mechanical Engg.	Mechanical
9	I/II	15ELE15/25	Basic Electrical Engg.	Electrical
10	I/II	15CPL16/26	Computer Programming Laboratory	CS & E
11	I/II	15WSL16/26	Workshop Practice	Mechanical
12	I/II	15PHYL17/27	Engg. Physics Lab	Physics
13	I/II	15CHEL17/27	Engineering Chemistry Lab.	Chemistry
14	I/II	15ELN15/25	Basic Electronics	E & C E
15	I/II	15CHE12/22	Engineering Chemistry	Chemistry
16	I/II	15CED14/24	Computer Aided Engineering Drawing	Mechanical
17	I/II	15CPH18/28	Constitution of India & Professional Ethics	Civil
18	I/II	15CIV18/28	Environmental Studies	Civil
19	III	15CH36	Technical Chemistry	Chemistry
20	III	15CHL38	Technical Chemistry Lab	Chemistry
21	I/II		Language (Eng.)	Humanities

5. **Annual/semester/choice based credit system (programme wise):** The UG and PG Program follows the Visvesvaraya Technological University (VTU) guidelines

Sl. No.	Degree	Courses offered	System followed
1	B.E.	Chemical Engineering	Semester and CBCS
2	MSc. Engg. by Research	Chemical Engineering	-
3	Ph.D.	Chemical Engineering	--

6. Participation of the Department in the courses offered by other Departments:

The Department of Chemical Engineering participating in courses offered by other departments are:

Sl. No.	Sem	Course Code	Course Title	Dept.
1	I	16CEEL16	Computer Applications Laboratory	M.Tech (Environmental Engg.)
2	II	16CEE253	Transport Process and Modeling of Aquatic Systems	M.Tech. (Environmental Engg.)
3	III	16CEE34	Project Work-I	M.Tech (Environmental Engg.)

7. Courses in collaboration with other universities, Industries, foreign institutions, etc.: Nil

8. Details of courses/programmes discontinued (if any) with reasons: Nil

9. Number of teaching posts:

Designation	Sanctioned	Filled
Professors	01	01
Associate Professors	02	02
Asst. Professors	03	03

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D. / M. Phil. etc.,):

Sl. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. students guided for the last 4 years	
						Guided	Guiding
1	Dr. G.P.Desai	M.E. Ph.D.	Asso. Prof & HOD	Environmental	25	--	02
2	Dr. B M.Kulkarni	M.Tech Ph.D.	Prof.	Bio Fuels Development.	34	01 (waiting for final viva)	03
3	Dr.C.M.Kalleshappa	M.E. Ph.D.	Asso.Prof	Environmental	23	--	01
4	Praveenkumar D G	M.Tech (Ph.D.)	Asst. Prof	Environmental	16	--	--
5	Dr. Mamatha M	M.Tech Ph.D.	Asst. Prof	Environmental	13	--	--
6	Miss. Shashikala K J	M.Tech	Asst. Prof	Pilot Plant and Scale Up	01	--	--

11. List of senior visiting faculty: Nil

12. Percentage of lectures delivered and practical classes handled (Programme wise) by temporary faculty: 16 %

13. Teacher-Student Ratio (Programme wise): 1:15

14. Number of academic support staff (technical) and administrative staff sanctioned and filled:

	Sanctioned	Filled	Actual
Technical	03	01	01
Supporting Staff	02	02	02

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG:

Qualifications	No. of Faculties
Ph.D.	04
M.Tech.	02

16. Number of faculty with ongoing projects from

a) National funding agencies and grants received: 01

Sl.No.	Title of the project	Funding Agency	Amount Received in Rs	No. of Faculty Involved
1	Pharmacological Screening of Traditional Medicines	VGST, Bengaluru	30 Lakhs	02

b) International funding agencies and grants received: Nil

17. Departmental projects funded by DST-FIST, UGC, DBT, ICSSR, etc. and total grants received:

Sl.No.	Year	Funding Agency	Amount Sanctioned in Rs.
1	2012-16	VGST	30,00,000.00
2	2013-14	VGST (TRIP)	40,000.00
3	2012-13	MODROB	13,00,000.00
4	2011-14	VTU, Belgaum	5,10,000.00
5	2010-16	KSBDB /KSCST	75,000.00
6	2012-15	AICTE (RPS)	9,00,000.00

18. Research Centre/facility recognized by the University:

Chemical Engineering Department is recognized as a Research Centre by VTU, Belagavi.

Year of Establishment	Number of Research Scholars completed Ph.D.	Number of Research Scholars Pursuing Ph.D.
2008-2009	-	05

19. Publications: (Whether last four years or complete)

Publication per faculty	05
Number of papers published in peer reviewed journals (national/international) by faculty and students.	32
Chapters in Books	Nil
Books with ISBN/ISSN	--
Citation Index	h-index 13-30, i-index: 0.29-1.79
Number of publications listed in International Database	22
Impact factor	1.56

20. Areas of consultancy and income generated:

Sl.No.	Year	Details of Consultancy done	Revenue generated in Rs
1	2012-13	Water & Waste water testing	32,500=00
2	2013-14	Water, Waste water & Soil testing	41,000=00
3	2014-15	Water & Waste water testing	39,000=00
4	2015-16	Water, Waste water& Soil testing	31,500=00

Department is actively involved in consultancy work in area of Environmental Management in association with Environmental Science and Technology Study Centre of Department of Civil Engineering. Areas of consultancy services offered include Industry Public Hearings, Water and Waste water analysis & monitoring, EIA assement reports, etc.

21. Faculty as members in

a) National committees: Nil

b) International Committees: Nil

c) Editorial Boards: Nil

d) SEBI: Nil

Dr.G.P.Desai: Expert committee member of District Level Environment Impact Assessment Authority (DEIAA) and District Level Expert Appraisal Committee (DEAC) Government of Karnataka.

22. Student projects:

a. Percentage of students who have done in-house projects including inter departmental/Programme: 100%

All students carry out their projects in the department under the guidance of faculty members.

b. Percentage of students placed for projects in organizations outside the institution i.e.in Research Laboratories / Industry/other agencies: Nil

23. Awards/Recognitions received by faculty and students:

Faculty Awards:

Sl. No.	Name of the faculty	Name of the Award	Awarding Authority	Year
1.	Dr.G.P.Desai	Best Student Project Guide Award	KSCST, Bengaluru	2015
2.	Dr.B.M.Kulkarni	Best Student Project Award	KSCST, Bengaluru	2010
3.	Dr.C.M.Kalleshappa Dr.B.M.Kulkarni	CISE	VGST	2011
4.	Dr.C.M.Kalleshappa	Career recognition	BEA	2011
5.	Dr.B.M.Kulkarni	Career recognition	BEA	2011

Student Awards:

Sl. No.	Name of the student	Name of the Award	Awarding Authority	Year
1.	MousamiNath	1st Rank	VTU, Belgaum	2011-2012
2.	Priyanka D	5th Rank	VTU, Belgaum	2011-2012
3.	Satish Kumar	7th Rank	VTU, Belgaum	2012-2013
4.	KeerthiKarigoudar	5th Rank	VTU, Belgaum	2014-2015
5.	Satish Kumar	First top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2012-2013
6.	Namratha K L	Second top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2012-2013
7.	Vinutha K	Third top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2012-2013
8.	Dharshan S Bathi	II Place	Intercollegiate T-20 Leather Ball Cricket Tournament	2012-2013
9.	Manjunath T S	First top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2013-2014
		Topper in Mass Transfer	Sri Sistla Sakshi Kameshwara Somayajulugaru Merit Prize	
10.	Anand Kumar	Second top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2013-2014
11.	Shivaleela G	Third top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2013-2014

Sl. No.	Name of the student	Name of the Award	Awarding Authority	Year
12.	KeertiKarigoudar	First top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2014-2015
		Topper in Mass Transfer	Sri Sistla Sakshi Kameshwara Somayajulugaru Merit Prize	2014-2015
13.	S. Vinuta	Second top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2014-2015
14.	Sindhu M.J	Third top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2014-2015
15.	Chetana K	First top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2015-2016
		Topper in Mass Transfer	Sri Sistla Sakshi Kameshwara Somayajulugaru Merit Prize	2015-2016
16.	Meghana P	Second top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold medal	2015-2016
17.	Kuldeep Kumar Tripathi	Third top student in Chemical Engg. 2013	Sri. H. Neelakantappa Gold Medal	2015-2016
18.	Ameer Sadat Hassan Ali, Akarsh S A	II Prize	Insignia 15, SDMCET, Dharwad	2015-2016
19.	Ameer Sadat Hassan Ali,	II Prize	Rasayan 2015, MSRIT, Bengaluru	2015-2016
20.	Ameer Sadat Hassan Ali	ISTE Student Chapter President	ISTE Student Chapter, BIET	2016-2017
21.	ArifaNazmaNazar, MU C RadhaMadhavi	II Prize	Bio-Chess 2016, SIT, Tumkur	2015-2016

24. List of eminent academicians and scientists/visitors to the department:

a. M.Satakarni, President, Aurobindo Pharma Hyderabad.
b. Dr. Giridhar Madras-Professor, IISc, Bangalore
c. Dr. Sanjeev Kumar Gupta- Professor, IISc, Bangalore
d. Sri Shivanand M Dambal- MD, EHS Group of Institutions, Bengaluru
e. Sri Kshitij Basavaraj, Director, PSK Pharma Pvt. Ltd., Harihar
f. Sri. Vidyashankar M N-Ex PS, Dept. of IT BT, GOK.
g. Dr Harish Hande- Managing Director, SELCO-India.
h. Sri Manjunath K S- District Env. Officer, Davangere.
i. Dr. DilipLataye-SLNIT, Nagpur.
j. Sri Shankar AnandLali, Manager, MPM, Bhadravathi
k. Sri. Nagaraj K M, Regional Sr. Env. Officer, KSPCB, Bengaluru.
l. Dr. Anand B Halgeri, Director, PPISR, Bengaluru.

25. Seminars/Conferences/Workshops organized & the source of funding:

Type of Activity	Nos.	Source of Funding
Seminars	Nil	
National Conferences	04	ISTE, ACES, Alumni.
International Conferences	Nil	
Workshops	Nil	

26. Student profile programme/course wise:

Batch	Name of the Course/Programme (refer question No.4)	Applications received	Selected	Enrolled		Pass percentage
				M	F	
2015-16	BE. Chemical Engg.	--	22	16	06	91
2014-15			21	16	05	90
2013-14			23	18	05	96
2012-13			24	15	09	100

Note: M=Male, F=Female

27. Diversity of Students:

Batch	Name of the course	% of Students from the same state	% of Students from the other state	% of students from abroad
2015-16	BE. Chemical Engg.	77	23	--
2014-15		81	19	--
2013-14		70	30	--
2012-13		58	42	--

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

Name of the competitive examinations	2015-16	2014-15	2013-14	2012-13
GATE	-	-	01	-
PGCET	02	02	02	04
ULRAT	-	-	01	-
GRE	-	-	-	01

29. Student progression:

Student progression	Against % enrolled				Total
	2015-16	2014-15	2013-14	2012-13	
Under Graduate to Post Graduate	02 (9%)	02 (10%)	02(9%)	06 (25%)	12
Post Graduate to M.Phil.	--	--	--	--	--
Post Graduate to Ph.D.	01				01
Ph.D. Post-Doctoral	--	--	--	--	--
Employed					
Campus selection	01 (5%)	01 (5%)	03(14%)	01(4%)	06(8%)
Other than campus recruitment	15(70%)	16(75%)	16(70%)	20 (85%)	67(75%)
Entrepreneurship/Self-employment	-	-	-	-	-

30. Details of Infrastructural facilities:

a) Library:

Central Library

Particulars	Numbers
Titles	**613**
Volumes	**2592**
National /International Journals	**07**

Departmental Library

Particulars	Numbers
Titles	89
Volumes	723

b) Internet facilities for staff &students:

25 Mbps Airtel leased line connection for students and faculty of the institute.

c) Class rooms with ICT facility: 01 classroom withLCD projector and Internet Connectivity

d) Laboratories:

Momentum Transfer Lab, Technical Chemistry Lab, Mechanical Operations Lab, Pollution Control and Instrumental Analysis Lab, Heat Transfer Lab, Chemical Reaction Engg. Lab, Mass Transfer Lab, Process Control Lab, Computer Applications and Simulation Lab, R & D lab, CISE Lab.

Major Equipments/ Instruments: Fermenter, Supercritical Fluid Extractor, FTIR, TLC Kit, Fuel Testing kit, Incubator, UV-Vis Spectrophotometer, Soxhlet Apparatus, Fuming Chamber, Bomb Calorimeter, Viscometers, Reactors, Orsat Analyzer, Controllers, Heat Exchangers, CHEMCAD software.

31. Number of students receiving financial assistance from college, University, government or other agencies:

Year	Source of Financial Assistance	No. of Students
2015-16	State Govt. SC/ST/OBC Scholarship	45
2014-15	KAR-E-Pass	38
2013-14	Central Govt. merit cum means Scholarship	35
2012-13	Sri Sistla Sakshi Kameswara Somayajulugaru Merit Prize Industry Financial Support Sri Shamanuru Shivashankarappa Education Trust, BEA Davanagere	20

32. Details on student enrichment programmes (special lectures/ workshops/ seminar) with external experts

Year	Special lectures/ workshops/ seminars/symposium	Topic	Resource Person/s
2016-2017	Chemexcel-2016	Environmental Safety and Health	Sri.Shivanand Dambal, MD, EHS group, Bangalore
2016-2017	M/S P S K PharmaPvt. Ltd., Harihar	Industrial Visit	Mr.Kshitij Basavaraj
2016-2017	M/S Meghana Biotech Lab, Belavanur, Davangere	Industrial Visit	Sri. Jayanna
2016-2017	Campus Placement Cracker	APPTITUDE Training	FACE
2016-2017	Seminar	Entrepreneurship awareness Camp	
2015-2016	M/S Synthite Industries Ltd., Kumarapatnam	Industrial Visit	Ramesh Yellapure

Year	Special lectures/ workshops/ seminars/symposium	Topic	Resource Person/s
2015-2016	Invited Talk	New Technologies in Paper processing and Opportunities for Chemical Engineers	Shankar AnandLaali, Manager, MPM, Bhadravathi
2014-15	Chemexcel-2015	Environmental Legislation overview	Sri. Nagaraj K M,Senior Environmental officer, KSPCB, Bangalore
2013-14	Chemexcel-2014	Value addition of Spices	Sri. Ramesh Yalapure, Lead, unit operations, Synthite Industries Ltd. Kumarapatnam
2012-13	Invited Talk	Technical Report Writing	Dr. Y J Rao, RVCE, Bangalore
2012-13	Chemexcel-2013	Future Energy challenges through Biofuels and Bio-refinery Technology	Dr.Anand B. Halgeri Director, Poornapragnya Institute of Scientific Research, Bangalore.

33. Teaching methods adopted to improve student learning: Seminars, Presentation, Video Lectures, VTU-ELearning, NPTEL Videos.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities:

Year	Activities	Location
2015-16	NSS Camps	BIET Campus
2015-16	LEAD group camps	BIET Campus
2015-16	High School Students Mentoring and Leadership Program	ANVESHANA, Bangalore
2014-15	Blood Donation Camps	BIET Campus
2014-15	Davangere Smart City Citizen awareness and Enrollment	Davangere
2014-15	Technology Barrier Reduction Programme	BIET Campus
2013-14	Water Testing, Material Testing and Certification, Third party inspection etc.	Testing Sites

35. SWOC analysis of the department and Future plans

Strengths:

Conducive Research Culture in department.
Excellent placement record.
Strong industry Institute Interface
State of the art instruments for pharmacological and herbal extraction.
Expertise in EIA, Biofuels, Pharmacological Screening.
Majority of faculty are with Ph. D.
Staff turnover ratio is very less.

Weaknesses:

ICT facility needs to be improved.
Collaboration with institutes of repute needs to be improved.

Opportunities

More opportunities in manufacturing chemical process industries.
Industrial consultancy and process engineering.
Opportunities in pollution control and industrial safety sectors.
Increase in opportunities in plant simulation package development.
Increased research opportunities and abroad assignments.

Challenges

Recession to industrial activity in Karnataka.
Reduction in employment potential in petroleum sector.

Future Plans:

To introduce a P G Programme.
To get QCI accreditation for departmental lab.
To take up center of excellence in pharmacy/ biofuels.

Chemistry

1. Name of the Department: Chemistry

2. Year of Establishment: 1979

3. Names of Programmes/Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.) : Ph.D

4. Names of Interdisciplinary courses and the Departments/units involved:
Teaching Technical Chemistry –I (15CH36) & Technical Chemistry Lab-I (15CH38), Instrumental analysis for 3rd and 4th semester Chemical Engineering.

5. Annual/semester/choice based credit system (programme wise) :
The UG & PG Programs follow the Visvesvaraya Technological University (VTU) guidelines with Percentage based semester system/CBCS.

6. Participation of the Department in the courses offered by other Departments:
Teaching Chemistry to All branches of Engineering and Technical Chemistry (III & IV) for 3rd and 4th Semester Chemical Engineering Students

7. Courses in collaboration with other universities, Industries, foreign institutions, etc: Nil

8. Details of courses/programmes discontinued (if any) with reasons: Nil

9. Number of teaching posts:

Designation	Sanctioned	Filled
Professors	01	01
Associate Professors	01	-
Asst. Professors	06	06

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D. / M. Phil. etc.,):

Sl. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. students guided for the last 4 years	
						Guided	Guiding
1.	Dr.B.E.Basavarajappa	M.Sc., Ph.D	Professor & Head	Organic Chemistry	34	05	02
2.	Smt.M.G.Thriveni	M.Sc.,	Asst.Professor	General Chemistry	20	--	--
3.	Mr.J.K.Prasannakumar	M.Sc.,	Asst.Professor	General Chemistry	12	--	--
4.	Dr.G.K.Prakash	M.Sc.,NET (CSIR),Ph.D	Asst.Professor	General Chemistry	15	--	--
5.	Dr.H.R.Mallikarjuna	M.Sc., Ph.D	Asst.Professor	General Chemistry	09	--	02
6.	Ms.T.L.Amrutha	M.Sc.,	Asst.Professor	Organic Chemistry	2.5	--	--
7.	Ms. U.R.Shwetha	M.Sc.,	Asst.Professor	General Chemistry	2.5	--	--

11. List of senior visiting faculty: Nil

12. Percentage of lectures delivered and practical classes handled (Programme wise) by temporary faculty: 29%

13. Student -Teacher Ratio (Programme wise): Chemistry/Physics Cycle: 13:1

14. Number of academic support staff (technical) and administrative staff sanctioned and filled:

Support staff	Sanctioned	Filled
Technical	01	-
Supporting staff	02	2

15. Qualifications of teaching faculty with D.Sc/ D.Litt/ Ph.D/ MPhil / PG:

Qualifications	No. of Faculties
Ph.D.	3
M.Sc	4

16. Number of faculty with ongoing projects from

a) National funding agencies and grants received: Nil

b) International funding agencies and grants received: Nil

17. Departmental projects funded by DST-FIST, UGC, DBT, ICSSR, etc. and total grants received:

Sl. No.	Year	Funding Agency	Amount Sanctioned in Rs	Title of the Project	Name of Principal Investigator
1	2012	DST-women Scientist India	19,40,000.00	Optimization of Biomethanation process for High TDS spent wash form Distilleries	Dr. Manjappa S
	2008-2012	VTU-VGST	20,17,000.00	Optimization of Cellulosic Ethanol Production From Feed Stocks.	
2	2013	KSCST, Karnataka	5,000.00	Aquifer mapping and location of sustainable sites for ground water recharging in Jagalur taluk of Davangere District	Dr. B.E.Basavarajappa
3	2012	KSCST, Karnataka	6,000.00	Impact of recharge on aquifers system and underground water quality in parts of Jagalur taluq , Davangere district	Dr. B.E.Basavarajappa
4	2016	KSCST, Karnataka	5000.00	An experimental investigation on removal of dyes and COD from Textile waste water using functionalised lingo cellulosic materials.	Dr.G.K.Prakash
Total			**39,73,000.00**	**Thirty nine lakh seventy three thousand only**	

18. Research Centre/facility recognized by the University:

Department of Chemistry recognized by Visvesvaraya Technological University, Belgaum

19. Publications:

	Numbers
Publication per faculty	6
Number of papers published in peer reviewed journals (national/international) by faculty.National : 08 + International : 18	26
Chapters in Books	Nil
Books with ISBN/ISSN	Nil
Citations	151
Citation Index	H-Index :10 I-Index : 5
Number of publications listed in International Database	12
Impact factor	1.47 to 5.8

20. Areas of consultancy and income generated:

Sl. no.	Name of the project	Sponsored by	Amount sanctioned (Rs.) in Lakhs
1.	Ambient Air Quality Monitoring At Harihar & Davangere Towns [1998-2002]	Ministry of Ecology & Environment. Govt. of Karnataka (4 years)	6.48
2.	Study Of Water Quality In Davangere District [1998-99]	Ministry of Ecology & Environment. Govt. of Karnataka	2.28
3.	Water Quality Of Tungabhadra River Under Gems / Minars Since 1992.	Karnataka State Pollution Control Board, Bangalore	3.95
4.	Bio-Monitoring Of Water Quality Near Haralalli Bridge.	Karnataka State Pollution Control Board, Bangalore	0.04
5.	Water Quality For Drinking Purposes of Chitradurga district. [1997-98]	Zilla Panchayath, Chitradurga Engineering sub division,	2.31
6.	Water Quality Of Tungabhadra River along Davangere and Harihar town stretches. Under NRCD programme since 1999.	National River Conservation Directorate (NRCD)	57.47
7.	Assessment Of Pollution Load In Nethravathi and Kali River In Karnataka State [1998-99]	Karnataka State Pollution Control Board, Bangalore	0.70
8.	Study of water quality of Davangere Taluk.[1999-2000]	PHE, Davangere.	6.17
9.	Study of suitability of water for drinking purposes. [1998-99]	DANIDA	0.54
10.	Modernization of ESTSC lab [1998-99]	AICTE New Delhi	12.00
11.	Bore well water qualities studies of Rural Areas of Karnataka [1999-2000] (Davangere, Heveri, Dakshina Kannada, Udupi Districts)	Rural Development Engineering Department, Govt. of Karnataka Bangalore	78.30
12.	Jalanirmal Project, New Delhi	MDP Consultant, New Delhi	1.30
13.	Jalasamvaradane, Hospet, Tumkur		1.50
	Total: One hundred seventy three lakhs and four thousand only		**173.04**

21. Faculty as members in

National committees: Nil

International Committees: Nil

Editorial Boards: Nil

SEB: Nil

22. Student projects:

a. Percentage of students who have done in-house projects including inter departmental/Programme: Projects and training programs will be carriedout by the students in higher semesters.

b. Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/ Industry/other agencies: Not Applicable

23. Awards/Recognitions received by faculty:

Sl. No.	Name of the faculty	Name of the Award	Awarding Authority	Year
1.	Dr.B.E.Basavarajappa	Institute best teacher award	BEA-BIET, Davangere	1999-2008, 2010, 2011
2	Smt. M.G.Thriveni	Institute best teacher award	BEA-BIET, Davangere	2004
3	Mr.J.K.Prasannakumar	Best research paper presentation award	Kuvempu University National Conference (NCSBS-2010)	2010

24. List of eminent academicians and scientists/visitors to the department:

a. Dr.P.Rudraiah, Former VC of Gulbarga University.
b. Dr.K.Siddappa, Former VC of Bangalore University.
c. Dr.S.P.Heremath, Former VC of Kuvempu University.
d. Dr.Krishnaprasad, Research Scientist, CLCRB, Bangalore.
e. Dr.D.K.Subramanian, Scientist , Department of CSE, IISc, Bangalore
f. Dr.M.I.Savadatti, Former VC of Mangalore University.
g. Dr.Gurupadappa, Former Principal of JJMMC, Davangere
h. Dr.P.Nagaraj, Rtd. Professor of Physics, National College, Bangalore
i. Dr.Udyashankar, Chief Research Scintest, RRI, Bangalore
j. Dr. Chandrasekhar, Vice Principal, JJMMC, Davangere
k. Dr. Syed Akheel Ahamed, Professor & Dean Faculty of Science & Technology, University of Mysore,
l. Dr.K.Srinivas, Professor,JNCASR, Bangalore
m. Sri. Vagishkumar, GE Health Care, Bangalore
n. Dr.B.Maadhusudhan, Dean, Science and Technology, Davangere University.
o. Sri. Ramji Raghavan, Founder & Chairman, Agastya International Foundation, Bangalore
p. Dr.B.B. Kaliwal, Vice Chancellor, Davanagere University,
q. Dr.Prakash Kulkarni, Chief Research Scientist, IISc, Bangalore
r. Prakash K, Corporate trainer, Bangalore

25. Seminars/Conferences/Workshops organized & the source of funding : (Last four years)

Type of Activity	Nos.	Source of Funding
Seminars	-	-
National Conferences	-	**-**
International Conferences	-	**-**
Workshops/STTP's	01	Shamnur Sugars, Duggavathi & VTU-VGST, Karnataka in the year 2012 in association with Civil Engineering department
	01	FAER-TBRP for Rural high school students of Davangere district from 18-04-2016 to 05-05-2016 in association with Physics and Mathematics department. This programme was sponsored by Zebra Technologies, Bangalore

26. Student profile programme/course wise :(Academic Results of last four years)

Batch	Name of the Course/Programme	Applications received	Selected	Enrolled		Pass percentage
				M	F	
2015-16	Engineering Chemistry	--	689	374	315	70.42
2014-15		--	670	367	303	77.19
2013-14		--	673	389	284	80.89
2012-13		--	727	460	267	84.08
2015-16	Engineering Chemistry Lab	--	689	374	315	100
2014-15		--	670	367	303	99
2013-14		--	673	389	284	98
2012-13		--	727	460	267	98

27. Diversity of Students:

Batch	Name of the course	% of Students from the same state	% of Students from the other state	% of students from abroad
2015-16	Chemistry / BE All Branches	96.08	3.61	0.29
2014-15		92.98	7.01	0.00
2013-14		85.43	14.56	0.00
2012-13		78.40	21.80	0.00

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.? : Not Applicable

29. Student progression: Not Applicable

30. Details of Infrastructural facilities:

a) Library:

Particulars	Numbers
Titles	173
Volumes	1688
National Journals	06(Online) +03(Reference Copy)
International Journals	162(Online)* +02(Reference Copy)
E-Books	31

b) Internet facilities for staff &students:
25 Mbps Airtel leased line connection for students and faculty of the institute.

c) Class rooms with ICT facility: Sharing ICT facilities with Engineering Departments.

d) Laboratories:
The department has equipped Engineering Chemistry Laboratory & Research and Development Laboratory by sharing the facilities with Chemical Engineering & Civil Engineering department.

31. Number of students receiving financial assistance from college, University, government or other agencies:

(Four years of all branches)

Year	Source of Financial Assistance	No. of Students
2015-16	**MHRD/Social welfare department/Minority organization/ Private organization/Trusts**	1279
2014-15		1110
2013-14		1019
2012-13		810

32. Details on student enrichment programmes (special lectures/ workshops/ seminar) with external experts

Year	Special lectures/ workshops/ seminars	Topic	Resource Person/s
2016-17	Special lecture	Computational fluids.	Dr.Prakash Kulkarni, Chief Research Scientist, IISc,B'lore
		Communication Skills	Dr.Prakash K, Corporate trainer, Bangalore
2015-16	Special lecture	Importance of biological science	Dr.B.B. Kaliwal, Vice Chancellor, Davanagere University
		Ethical management	Sri. Ramji Raghavan, Founder & Chairman, Agastya International Foundation, Bangalore
		Nano science	Dr.B.Maadhusudhan, Dean, Science and Technology, Davangere University
		Corporate life	Sri. Vagishkumar, Former President, GE Health Care, Bangalore
		Indian innovations in biological science	Dr.K.Srinivas, Professor, JNCASR, Bangalore
2014-15	Special lecture	Context in science	Dr. Syed Akheel Ahamed, Professor & Dean Faculty of Science & Technology, University of Mysore
		Wonders of astronomy	Dr.Udayshankar ,Chief Research Scientist, RRI, Bangalore
2013-14	Special lecture	Innovations in science.	Dr.P.Nagaraj, Rtd. Professor of Physics, National College, Bangalore
		Hygene Health and its value.	Dr. Chandrashekhar, Vice Principal, JJMMC, Davangere

33. Teaching methods adopted to improve student learning:

Special Classes in Theory& Practical.

Usage of EDUSAT facility from VTU, Belgaum

Usage of National Programme on Technology Enhanced Learning (NPTEL) lectures for application oriented syllabus.

Usage of Power Point presentation

34. Participation in Institutional Social Responsibility (ISR) and Extension activities:

Conducted Technology Barrier Reduction Program (TBRP) under Foundation for Advancement of Education & Research (FAER) funded by ZEBRA Technologies, Bengaluru from 18-04-2016 to 06-05-2016 for rural high school students of Davangere District.

Conducted workshop for first year students on communication skills.

NSS/ NCC Activities

Conduction of Blood Donation Camp

Conduction of Swatch Bharat Abhiyaan

Conduction of Rastriya Sadhbhavan Divas

Celebration of constitution day
Conduction of Jaago Bharat Abhiyaan

35. SWOC analysis of the department and Future plans

Strengths:

The department has committed team of staff members
Conducive environment for research
The department has adequate facilities to conduct Research development activities
The department was recognized as first R&D center in state from VTU, Belgaum.
The department makes counselling of students in regular intervals.
The department has analyzed at about 16000 bore well water from various parts of state for its drinking quality parameters.
The department has prepared Environmental Impact Assessment reports for various industries.
The department is engaged in consultancy projects form the industries / Govt./ PSU sectors.

Weaknesses:

ICT facilities needs to be improved.
R & D lab needs upgradation.

Opportunities:

Provision to take up research in Synthetic Organic Chemistry, Nanomaterial, Pharmaceutical Chemistry and Wood Technology, Environmental Chemistry leading to Ph.D degree.
Provision to take up the consultancy work by making collaboration with industries.

Challenges:

To get financial assistance from various funding agencies.
To publish productive research papers in high impact journals.

Future plans:

To establish Centre of Excellence in Chemistry.
To focus on the cutting edge research areas like Medicinal Chemistry, Pharmaceutical chemistry, Wood Technology and Environmental Remediation.