

**VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
IBRAHIMBAGH, HYDERABAD-31**

Approved by A.I.C.T.E., New Delhi and
Affiliated to Osmania University, Hyderabad-07

**Sponsored by
VASAVI ACADEMY OF EDUCATION
Hyderabad**



**STUDENT HAND BOOK
2017-18**

**Academic Regulations for B.E under
CHOICE BASED CREDIT SYSTEM (CBCS)**

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Note: Students and Parents are specially advised to carefully read the Academic rules and regulations given in this booklet.

ABOUT THE COLLEGE

Established in 1981 by Vasavi Academy of Education under the stewardship of Late Sri Pendekanti Venkata Subbaiah, a veteran statesman of independent India and by a few eminent people from different walks of life Vasavi College of Engineering represents a rich tradition of excellence in technology based education in a stimulating environment. From a modest beginning with just three undergraduate programs, viz., B.E. degree programs in Civil, Mechanical and Electronics & Communication Engineering, with dedicated efforts for over **36** years, it has now grown into a mighty center of learning with excellent and well-developed infrastructural facilities, offering 6 undergraduate programs, viz., B.E. in Civil, Mechanical, Electrical & Electronics, Electronics & Communication Engineering, Computer Science & Engineering, and Information Technology, in addition to a 3-year postgraduate program in Computer Applications (MCA), and 2-Year Postgraduate Programmes in CSE, ECE, EEE and Mechanical Engineering.

VISION

Striving for a symbiosis of technological excellence and human values

All the undergraduate (B.E) programs were accredited by National Board of Accreditation (NBA) for the academic years 2013-2015. The college sought fresh approval for NBA accreditation for two eligible PG programs and MCA program. The college has been recognized under 12(B) and 2(f) sections of the University Grants Commission (UGC).

MISSION

To arm the young brains with competitive technology and nurture the holistic development of the individuals for a better tomorrow.

The college has been granted ***autonomy by the University Grants Commission***, New Delhi and Osmania University, Hyderabad for all the programs for a period of six years with effect from 2014-15.

Now, the college is implementing ***Choice Based Credit System (CBCS) w.e.f 2016-17 Academic Year for both UG and PG programmes offered by it***

The College has 176 highly qualified and experienced faculty members consisting of Professors, Associate Professors and Assistant Professors and around 158 technical and supporting staff. The college has very good infrastructural facilities which go beyond the curriculum requirements. The college offers value-added courses in GIS, CAD/CAM, DSP, VLSI, Networking, J2EE and communication skills to bridge the gap between the curriculum and the requirements of the Industry. Finishing school has been made part of curriculum from the second year onwards to improve the skills of the students.

QUALITY POLICY

Education without quality is like a flower without fragrance. It is our earnest resolve to strive towards high standards of teaching, training and developing human resources.

A Research & Development (R&D) Cell is established by personnel from industry / research organization to encourage the faculty and the students in acquiring additional qualifications and knowledge.

This Cell also facilitates the faculty for interaction with industry/research organizations in getting sponsored research projects. In addition, the college extends consultancy in various fields of engineering and technology. The Center for Counseling and Placement at Vasavi College of Engineering provides personal and career-related support to its students. The educational experience at the college is enlivened and enriched by an array of extra-curricular activities to fulfill the cultural and emotional needs of students.

A good number of ranks in university examinations are secured by our students every year. The all-round development of a student is achieved by exposing him/her to the outside world in a systematic and well planned manner. Just not marks and ranks, but also ethics and morals are incorporated into psyche of a student at Vasavi in a cautious way. This unification of tradition and technology makes Vasavi a place for paradise of learning.

VASAVI ACADEMY OF EDUCATION (VAE)

GOVERNING BODY MEMBERS

Sri G.V. Gunnayya Chetty	:	Patron
Sri V.V. Sayi	:	Patron
Sri P. Ramamohan Rao	:	President
Prof. T.V. Subba Rao	:	Vice-President
Sri M. Krishna Murthy	:	Secretary
Sri K. Vasudeva Gupta	:	Joint-Secretary
Sri P.V. Ratnam	:	Treasurer
Sri P. Balaji	:	Member
Sri K.V. Rangaiah	:	Member
Sri K. Ashok Kumar	:	Member
Smt. P. Indrani	:	Member
Sri P. Gouri Prasad	:	Member
Sri V.M. Parthasarathi	:	Member
Sri Lagisetty Subbagurumurthi	:	Member
Prof. Dr.V. Srinivasulu	:	Special Invitee

Institutions sponsored by Vasavi Academy of Education

INSTITUTION	ESTABLISHED
Vasavi College of Engineering	1981
Vasavi Public School	1983
Vasavi Polytechnic	1984
Pendekanti Law College	1990
Pendekanti Institute of Management	1991
Vasavi College of Music & Dance	1996

VASAVI COLLEGE OF ENGINEERING MANAGING COMMITTEE

Sri P Ramamohan Rao	President
Prof. T.V. Subba Rao	Vice President
Sri M Krishna Murthy	Secretary
Sri K. Vasudeva Gupta	Joint Secretary
Sri P V Ratnam	Treasurer
Sri D.B. Ramanatha Gupta	Member
Dr. K. Jaya Sanker	Principal & Ex-Officio Member

VASAVI COLLEGE OF ENGINEERING BOARD OF GOVERNORS

1.	Prof. Mohammad Suleman Siddiqi, <i>Chairman</i> Former Vice Chancellor, Osmania University, Hyderabad
2.	Prof. Anup Beniwal, Dean, Indraprastha Universtiy, UGC Nomimee
3.	State Government nominee
4.	University Nominee
5.	Sri P Ramamohan Rao, President, VAE, Member
6.	Prof. T.V. Subba Rao, Vice-President, VAE, Member
7.	Sri M. Krishna Murthy, Secretary, VAE, Member
8.	Sri P. V. Ratnam, Treasurer, VAE, Member
9.	Sri P. Balaji, member, VAE
10.	Dr. M.R. Madhav, Former Professor, IIT Kanpur, Member
11.	Sri Bommidala Srikrishna Murthy, Industry Nominee, Member
12.	Dr. T. Adilaxmi, HOD- CSE, Member
13.	Dr. G.V. Ramama Murty, Director Academics, member
14.	Dr. K. Jaya Sanker, Principal, Member Convenor.

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STUDENT PERSONAL DATA

Name :
Hall Ticket No :
Class :
Branch:
Address :

PHOTO

Phone Nos. :
Home :
Mobile :
E-mail ID :
Bank A/c. No. :
Credit Card No. :
Passport No. :
Driving License :
Vehicle No :

Medical Information

Height :
Weight :
Blood Group :

In case of Emergency, Contact

Name :
Phone No. :

Name :
Phone No. :

COLLEGE PROFILE

Vasavi College of Engineering, established in 1981, is a self-financed institution, approved by AICTE, New Delhi and affiliated to Osmania University, Hyderabad and offers the following courses:

Branch	Starting Year	Intake (2017-18)
4-Year Undergraduate Programmes		
Civil Engineering	1981	60
Electronics & Communication Engineering	1981	120
Mechanical Engineering	1981	120
Computer Science & Engineering	1994	120
Electrical & Electronics Engineering	1999	60
Information Technology	2000	120
2-Year PG Programmes (Full-time 4 semesters)		
Embedded Systems & VLSI Design (ECE)	2003	18
Communication Engineering & Signal Processing (ECE)	2011	18
Advanced Design & Manufacturing (Mechanical)	2003	18
Computer Science & Engineering (CSE)	2011	18
Power Systems and Power Electronics (EEE)	2012	24
3-Year Postgraduate Programmes		
Master in Computer Applications (MCA)	1994	60

All the U.G programmes of accredited by National Board of Accreditation (NBA) for two years with effect from September 2013. The Departments Computer Science & Engineering (**CSE**), Electronics & Communication Engineering (**ECE**) and Mechanical Engineering (**ME**) have been recognized by the Osmania University, Hyderabad as **Research Centers**.

Some of the Faculty members have been recognized as research supervisor by the Osmania University and JNTU-Hyderabad in the above departments.

INFRASTRUCTURE

VASAVI, in its constant pursuit of offering quality education, has created excellent infrastructural facilities for all the programmes and established certain advanced laboratories such as, CISCO Networking Lab, VLSI Design Centre, Embedded Systems, DSP, CAD/CAM and GIS dealing with contemporary technologies. Common facilities for the academic support, the Basic Science Laboratories, Central Computing Laboratory, Manufacturing Practice Laboratory and Language Laboratory were established for the first year courses. The Phonetics Laboratory, Interactive Communication Laboratory and reading room were set up, much before it was made mandatory by the university, to improve the communication skills of the students. Recently, the English Language Laboratory is upgraded to Multi-Media Laboratory. There are a total of 1159 computer systems in the college with latest configuration. The College main computer center houses 64 latest computer systems and 14 servers. All the systems in the college campus are networked through LAN. Well established intranet supports the faculty and the administration for online data retrieval of student details, marks, attendance, faculty publications etc.

FACULTY

The college has 176 highly qualified and experienced faculty members including 2 Adjunct Professors, 22 Professor, 29 Associate Professors.

With a view to strengthen in the teaching-learning process and quality improvement, the College conducts staff development program. All well ventilated, spacious and luminous classrooms located in architecturally style fine buildings amidst lush green lawns provide a pleasant stay to the students at campus of Vasavi College of Engineering.

Supporting facilities such as buses for comfortable and safe transport, campus wide EPBAX telephone systems, 24X7internet connectivity, Generators (500 KVA, 120 KVA) for uninterrupted power supply, bank and subsidized canteen are provided to the students and staff. The college has installed roof top solar power plant of 200KWp capacity.

COMPUTER CENTER

The College has established a high-speed campus-wide network that connects all the computer systems located in the college campus. A fully distributed computing environment based on clusters of workstations and PC's provides the staff and students ready access to computing resources, services, software and applications. The environment is tailored to the specific teaching/learning needs of each Department. Full access is provided to email, the Internet, on-line journals, e-content, QEEE facilities, departmental Intranets and other online sources of services and information through BSNL leased line Internet connectivity of 100 mbps, separate lines of 10Mbps and 1Gbps from ACT Fiber.

The Server room houses the various servers - Windows Server, LINUX Server, Oracle Database Server are connected to the LAN, thereby providing diverse computing platforms to the students, across the campus. The Internet Gateway comprises a Web Server, Symantec Protection Suite Enterprise 3.0, Fortigate 310B UTM, Fortianalyzer 100C, CISCO Router 2800, CISCO Switch and the other networking components required for an efficient LAN. There are 64 computer systems in the center.

FACILITIES

<i>Particulars</i>	<i>Availability</i>
No. of Servers	14
No. of Computers	64
No. of Learning Resources	NPTEL Courses (192 Web + 212 Video Courses)

SOFTWARE

SNo	Name of the Software	Make
1	MATLAB Image Processing Tool Box, Computer vision tool box Image acquisition tool box, Neural Network tool box Optimization tool box, Fuzz logic tool box Parallel computing tool box	Mathworks
2	Aneka, NET cloud computing software Enterprise edition 3.0	MANJRA Soft
3	Oracle 11G Standard Edition	Oracle
4	Services IBM Rational Seed Suit Enterprise Software	IBM

SNo	Name of the Software	Make
5	Adobe Acrobat 10.0 Professional	Adobe
6	Symantec Protection Suite Enterprise Edition 3.0	Symantec
7	IT Academy MSDN Academic Alliance OS: XP, Vista, Windows 7, Windows Server 2003 & 2008, 2012 Developer Tools: Visual studio 2003/2005/2008 and 2010, 2013 Designer Tools: Expression Studio 1/2/3/4 RDBMS: SQL Server 2000/2005/2008 MSDN Library: 2001 -10 MSDN Library	Microsoft
8	Informatica Power center 8 standards edition on windows	Informatica
11	MS Office 2007 suite	Microsoft
12	VxWorks 5.5 OEM Development License, includes one Board Support Package and BSP Developers kit for X86 Or PPCXX Host PC Turnado 2.2.1 Standard IDE Package includes Core Tools.Code. Documentation – 5 Users Node Locked. Licenses	Mistral
13	Oracle 9i Developer, Internet Suite	Oracle
14	Embarcadero Network Code Gear C, C++ builder RAD XE STUDI ARCHT Academic	C, C++ builder
15	Developer 2000	Oracle
16	Red Hat Enterprise Linux 6.0	Red Hat
17	Grammarly EDU (Anti-Plagiarism Checker software)	
18	Primavera P6 EPPM 16.1	

**DR. SARVEPALLI RADHAKRISHNAN
LEARNING RESOURCE CENTRE: CENTRAL LIBRARY**

Dr. Sarvepalli Radhakrishnan Learning Resources Centre, the central library has a total built up area of 44,503.36 Sq. ft. It houses 12610 titles and 105917 volumes. The college subscribes to **66** and **39** National and International Journals and magazines respectively in print form and a total of 3374 online journals are at the disposal of the students published by Professional Bodies like Institute of Electrical & Electronics Engineers (IEEE), American Society for Mechanical Engineers (ASME) and American Society for Civil Engineers (ASCE). The College is a member of Delhi Library Network (DELNET). Digital library is provided to the students in 415 sq.ft space.

E - JOURNALS & E-BOOKS SUBSCRIBED	
ASCE	35
ASME	27
IEEE ASPP	155
DELNET CONSORTIUM (IESTC E-Journals -2016)	1152
DELNET E-Journals	817
DELNET MEMBERSHIP E-Books	335
Journals and magazines Print version	103

The college provides a book-lending scheme to the students with a full set of textbooks for a nominal annual payment in addition to the provision of issuing **4** library cards per student. The Library is fully computerized and availability of any book in the library can be checked just by a click of mouse.

NPTEL Courses: To reinforce the technical knowledge of the students, college has purchased courseware from National Program on Technology Enabled Learning (NPTEL) developed by IITs and IISc and given free access through Intranet to all the students and faculty.

CO-CURRICULAR & EXTRA – CURRICULAR ACTIVITIES

Vasavi campus is a place of extravaganza of co-curricular and extra activities. Students’ brains are sharpened by conducting various workshops, seminars, quizzes, debates, essay writings, presentation of technical papers, working model exhibitions etc.

Every year college hosts National Technical Symposium on the banner **ACUMEN** for which students throughout India are invited to the campus to compete and present the best technical papers. The college annual day is celebrated in a big way on the name of **EUPHORIA** in which students can show their hidden talents in cultural and other events.

To improve the oral and writing skills, number of clubs are formed. The students are encouraged to participate in co-curricular and extra-curricular activities under various clubs listed in the following pages. **The** College publishes '**Voices**', the college newsletter, '**In-touch**', the Alumni Newsletter, **Reminiscences** and **Technocrats**, the Annual College Magazine etc.

The Physical Education Department encourages and provides practice to the students to participate in sports & games at Inter Collegiate, Intra-University and National Level Tournaments. The college has facilities for indoor and outdoor games & sports.

NATIONAL SERVICE SCHEME (NSS)

The College has an NSS unit and the student volunteers take up socially useful activities. The unit has organized blood donation camps, service camps to orphanages, tree plantation camps, flood relief camps etc.

CAREER GUIDANCE, TRAINING AND PLACEMENT CELL

Human Resources (HR) Department provides career guidance and counselling to the budding engineers. It prepares students to meet industry's requirements technically and enrich them to suit the corporate world with excellent soft skills.

The department arranges personality development programmes for the students and takes care of the pre-placement training & placements. It explores the various career options in the fields of All India Civil Services, All India Engineering Services, Scientific, Research and Industrial Organizations, Defence Services in addition to arranging counselling sessions on higher education avenues in India and abroad.

SWAYAM – THE ENTREPRENEURSHIP CELL

Swayam – The Entrepreneurship Cell of the College is established to develop and nourish the latent entrepreneurial spirit inherent in students, and help them to become Entrepreneurs. The vision of the cell is to develop entrepreneurs by creating an ecosystem that encourages and

supports the entrepreneurial potential of students. The mission of the cell is to inculcate the spirit of entrepreneurship among students and to provide them with all necessary support and mentoring including equipping them with the right skills and attitude to convert an idea into a business venture.

INNOVATION AND ENTREPRENEURSHIP DEVELOPMENT CENTRE (IEDC)

The Government of India recognized that young technocrats are looking for opportunities to exploit their full potential by setting up their own ventures thus becoming "job generators". As part of this strategy **National Science & Technology Entrepreneurship Development Board (NSTEDB)**, Department of Science & Technology, Government of India, had set up Entrepreneurship Development Cells (EDCs) in educational institutions. The main objective of creating such cells is to *"Develop institutional mechanism to create entrepreneurial culture in academic institutions to foster growth of innovation and entrepreneurship amongst the faculty and students"*.

SAFETY NORMS & CHECKS

The safety measures and checks are followed in buildings, laboratories and in other critical installations as per the standard norms. The entire campus is equipped with a modern firefighting system. In addition, all the buildings are fitted with fire extinguishers

EMERGENCY MEDICAL CARE AND FIRST-AID

The college provides First-Aid and medical help at the centralized place with trained staff. The health center is equipped with four beds and common medicines. To meet the emergency medical attention, college has appointed a doctor and a staff nurse. A special ambulance has been provided to meet critical medical care needs.

TEACHING-LEARNING PROCESS

The members of faculty maintain course files, lesson plan and lesson record to conduct the classes and laboratory courses as per the curriculum requirement. The quality of assignments tests and semester examinations is maintained to meet the program education objectives. The tutorial classes/remedial classes are conducted as per the schedule in the timetable.

PROCTORIAL SYSTEM

To monitor academic progress and holistic development of students intimately, **proctor system** (mentoring system) has been introduced in the college.

In this system, each student is kept under the care and guidance of a faculty member who acts as a *loco parentis*. For every faculty member twenty students are allotted. Proctor continuously monitors the progress and welfare throughout the stay of the student in the college. The Class Coordinator of each class monitors classwork schedule, discipline of students coming in time, etc.

The college has introduced **Professional Practice School** to associate second year B.E. students with an industry during their summer vacation. The college has been building purposive partnership with the industry to provide practical learning experience and to expose the students to the emerging trends and contemporary technologies; the College has signed **Memorandum of Understandings (MOUs)** with various corporate houses and Industries.

To further improve the skills of the students to face the campus placement interviews, new courses like communications skills, technical skills have been introduced in the curriculum from second year onwards itself as part of *finishing school*.

ALUMNI

The College has been interacting with the Alumni regularly with a view to providing career guidance to their juniors and facilitate connectivity with industry in areas of students' visits, projects, placements, consultancy etc. Alumni Meet 'REFLECTIONS' is organized every year. The alumni website is www.vcealumni.org.

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
ACADEMIC RULES AND REGULATIONS
FOR FOUR YEAR B.E DEGREE PROGRAM
Under Choice Based Credit System (CBCS) w.e.f A.Y.2017-18

The college has released the academic rules and regulations from the Year 2014-15 on becoming autonomous institution and are revised based on the need. These regulations issued so far are listed below:

CR-2014-15 The Academic rules and regulations stipulated for the students admitted into the college during the Academic Year **2014-15** under Autonomous status known as "**CR-2014-15**".

CR-2015-16 Few changes have been made to the scheme of instruction and examination to the above regulations "**CR 2014-15**". The modified Academic rules and regulations stipulated for the students admitted into the college during the Academic Year **2015-16** under Autonomous status known as "**CR-2015-16**" and were published in the student hand book 2015-16.

CBCS-CR-2016-17 The college is implementing Choice Based Credit System (CBCS) w.e.f 2016-17 for both UG and PG programs offered by it, i.e. B.E (Eight Semesters), M.E/M.Tech (Four Semester) and MCA (Six semesters). Hence the new scheme of instruction and examination and other academic rules and regulations known as CBCS-CR-2016-17 will be in force and applicable to all the students admitted into the college during the Academic Year 2016-17. The new regulations CBCS-CR-2016-17 are given below in this hand book.

CBCS-CR-2017-18 On the recommendations of Academic Council and Board of Governors of Vasavi College of Engineering (Autonomous) College of Engineering, certain amendments have been made in the academic rules and regulations given above as CBCS-CR-2016-17 and are now named as CBCS-CR-2017-18. These regulations will be in force and applicable to all the students admitted into the college during the Academic Year 2017-18. The new regulations CBCS-CR-2017-18 are given below in this hand book.

The above rules and regulations, specified herein after shall be read as whole for the purpose of interpretation. In case of arising a doubt, the interpretation of the Academic Council, the Statutory Body constituted as per UGC norms of the college is final. The Academic council has the power to make amendments to these regulations whenever necessary and shall be approved by Board of Governors.

1. DEFINITIONS OF KEY WORDS:

Academic Year	:	Two consecutive (one odd + one even) semesters constitute one academic year
Choice Based Credit System (CBCS)	:	The CBCS provides choice for students to select from the prescribed courses (core, elective or open or soft skill courses).
Programme	:	An educational programme leading to award of a Degree, diploma or certificate
Semester	:	Each semester will consist of 16-17 weeks of academic work equivalent to 90 actual teaching days. The odd semester may be scheduled from July to November and even semester from January to May.
Discipline	:	Means Branch or Specialization of B.E. Degree Programme, like Civil Engineering, CSE, ECE, EEE, IT and Mechanical engineering etc.,
Course	:	Usually referred to, as 'papers' is a component of a programme. All courses need not carry the same weight. The courses should define learning objectives and learning outcomes. A course may be designed to comprise lectures/ tutorials/ laboratory work/ field work/ outreach activities/ project work/ vocational training/viva/ seminars/ term papers/ assignments/ presentations / self-study etc. or a combination of some of these.
Course Flexibility	:	Course work of students to be made flexible to enable fast, average and slow learners among them to plan and pace the same in a Semester as may be necessary and register for more/average/less Credits within limits (e.g., +/- 20%) from the prescribed value, based on their learning capacities as observed

		from CIE, SEE results in Coursework in the previous Semesters.
Credit Based Semester System (CBSS):	:	Under the CBSS, the requirement for awarding a degree or diploma or certificate is prescribed in terms of number of credits to be completed by the students.
Credit:	:	A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture) or two hours of practical work/field work/tutorial per week.
Credit Point:	:	It is the product of grade point and number of credits for a course.
Grading	:	To be normally done using Letter Grades as qualitative measure of achievement in each Course like: A+ (Out Standing), A (Excellent), B+ (Very Good), B (Good), C (Average), D(Pass), F(Fail) based on the marks (%) scored in (CIE+SEE) of the Course and conversion to Grade done by Relative/Absolute Grading.
Grade Point (GP)	:	It is a numerical weight allotted to each letter grade on a 10-point scale. A+ =10, A=09, B+=08, B=07, C=06, D=05 and F=0 and student passes a Course only when getting $GP \geq 04.5$
Semester Grade Point Average (SGPA)	:	It is a measure of performance of work done in a semester. It is ratio of total credit points secured by a student in various courses offered in each semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.
Cumulative Grade Point Average (CGPA):	:	It is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters of program. It is expressed up to two decimal places.

Passing Standards	:	Student to be declared successful at the Semester-end or Programme-end only when getting SGPA or CGPA ≥ 4.5 , with none of the Courses registered in the given Semester or for the Award of degree remaining with F Grade.
Credits Required for Award Degree	:	A student shall earn prescribed number of Credits recommended by the department concerned for the award of UG/PG Degree. Also, each student to be successful in the mandatory courses as may be prescribed to qualify for the Degree and shall not have any pending disciplinary actions.
Transcript or Grade Card or Certificate	:	Based on the grades earned, a grade certificate shall be issued to all the registered students after every semester. The grade certificate will display the course details (code, title, number of credits, grade secured) along with SGPA of that semester and CGPA earned till that semester.
Course Load	:	Every student to register for a set of Courses in each Semester, with the total number of Credits being limited by considering the permissible weekly Contact Hours
Course Registration	:	Every student to formally register for Courses (Credits) under faculty advice in each Semester.
Course Evaluation	:	Continuous Internal Evaluation (CIE) in the Semester & Semester End Examination (SEE) constitute the major evaluations prescribed for each course, with only those students maintaining a minimum standard in CIE (to be fixed by the institution) being permitted to appear in SEE of the course.
Continuous Internal Evaluation (CIE)	:	To be normally conducted by the course instructor and include mid-term/weekly/fortnightly class tests, homework, problem solving, group discussion, assignments, quiz, mini-project & seminar throughout the semester, with weightage for the different components being fixed at the institutional level.

Semester End Examination (SEE)	:	To be normally conducted at the institutional level and cover the entire course syllabi. The syllabi are to be modularized and SEE questions to be set from each unit/module, with choice if any, to be confined to unit/module concerned only. The questions to be comprehensive emphasizing analysis, synthesis, design, problems & numerical quantities.
Revision of Regulations, Curriculum and Syllabi	:	The institution, from time to time may revise, amend or change the Regulations, scheme of examinations, curriculum and syllabi with the approval of Academic Council.
College	:	Means "Vasavi College of Engineering", (Autonomous), Ibrahimbagh, Hyderabad-500031, Telangana State.
Student	:	Means a candidate who has taken admission into undergraduate and Postgraduate programs of this college as per the guidelines stipulated from time to time by the Government of Telangana for admissions into various courses of study and the affiliating university, i.e. Osmania University, Hyderabad.
Head of the Institution	:	Means the Principal of the College
Controller of Examinations	:	Means the Authority of the college who is responsible for all the examination activities of the Autonomous College.
2. ADMISSION PROCEDURE		
Admissions are made as per the norms issued from time to time by the Government of Telangana State.		
2.1	Undergraduate Admissions	The admissions into undergraduate Engineering programs (B.E) for all the branches of study are made as per the norms of State Council of Higher Education (TSCHE), Telangana State Government. As per the existing norms of State Government

	<p>a. 70% of seats under Category-A (based on the rank obtained in state level entrance examination-TSEAMCET) will be filled by the Convener, TSEAMCET.</p> <p>b. 30% of seats under Category-B (15% NRI and 15% Management quota) will be filled by the management as per the guidelines issued through Government orders from time to time by the TSSCHE and State Government.</p>
2.2	<p>Spot Admission Procedure for B.E. 4-year Program</p> <p>Any seats left vacant in the convener quota will be filled based on the guidelines given by Convener, TSEAMCET.</p> <p>Procedure: The College issues an advertisement after necessary approvals. The spot admissions will be made as per the guidelines issued from time to time by convener TSEAMCET.</p>
2.3	<p>Admission to the second year of Four Year B.E (Lateral Entry) Program</p> <p>Students seeking admission into this category shall qualify in TSECET conducted by the Government of Telangana. Admissions are on the merit ranks obtained by the students.</p>
2.4	<p>Spot Admission Procedure for B.E Lateral Entry</p> <p>Admission will be made based on the guidelines issued by the Convener, TSECET.</p> <p>Procedure: The College issues an advertisement after necessary approvals. The spot admissions will be made as per the guidelines issued from time to time by the Convener, TSECET.</p>
3. PROGRAMMES OFFERED	
	<p>At present college offers six UG Programmes namely Civil, CSE, ECE, EEE, IT and Mechanical Engineering. A student may be admitted to any one of the programmes of study as per the admission rules. All the programs are offered under semester mode.</p>

4. STRUCTURE OF THE PROGRAMME	
4.1	Categorization of Courses The curriculum of B.E. Programme is designed to have syllabi consisting of theory, practical courses and project that shall be categorized as follows:
	a. Humanities and Social Sciences (HS) courses include Technical English, Communication skills, management etc.
	b. Basic Sciences (BS) courses include Mathematics, Physics, Chemistry, Biology etc.
	c. Engineering Sciences (ES) courses include Materials, Workshop, Basics of Electrical/ Electronics/ Mechanical/Computer Science Engineering, Engineering Graphics, Instrumentation, Engineering Mechanics, Instrumentation etc.
	d. Professional Core Subjects (PC) are core courses relevant to the chosen specialization/branch
	e. Professional Elective Subjects (PE) are courses relevant to the chosen specialization/ branch offered as electives.
	f. Open Elective subject (OE) courses from other technical and/or emerging subject areas offered in the College by the Departments of Engineering, Science and Humanities.
	g. Mandatory Course: Course work on peripheral subjects in a programme, wherein familiarity considered mandatory. To be included as non-Credit, Mandatory Courses, with only a pass in each required to qualify for the award of degree from the concerned institution. Such Courses to be limited to <5 % of the maximum permissible Course/Credit Load.
	h. Project Work and/or internship in industry or elsewhere, seminar.
5. DURATION OF STUDY	
5.1	The duration of the B.E program is four years. Every academic year shall comprise of two semesters, each of 16 weeks (minimum) of instruction-the two semesters hereinafter referred to as the odd semester and even semester in chronological order. The eight semesters of four-year B.E program are consecutively numbered as 1,2,3,4,5,6,7and 8.

	No readmission/admission/promotions/transfers can be made after 4 weeks of the commencement of instruction of semester in I, II, III and IV years. In case there is any court cases consequent to which the Convener of Admissions/Principal is compelled to admit a student after the announced last date of admissions, the admission (seat) of such a student be reserved for the subsequent year on a supernumerary basis.
5.2	Internal (Continuous Internal Assessment: CIE) examinations shall be conducted during the instruction period of the semester.
5.3	<p><i>As per the UGC Guidelines on determination of uniform span period (UGC Letter No. F-12-1/2015 (CPP-II) dated and 15.10.2015 and Osmania University letter No.336/M/Acad.I/2016 dated 21.03.2016) is N+2 with which students may be allowed to qualify for degree with effect from the Academic Year 2016-17. Where N is the normal or minimum duration prescribed for completion of the programme.</i></p> <p>Hence candidates of four-year degree program, who fails to fulfill all the requirements for the award of the degree as specified hereinafter within (N+2= 4+2=6) six academic years from the time of admission, will forfeit their seat and their admission will stand cancelled.</p> <p>Diploma candidates admitted to the second year under lateral entry scheme shall fulfill all the requirements for the award of the degree as specified hereinafter within s(N+2=3+2=5) five academic years from the time of admission failing which they will forfeit their seat and their admission will stand cancelled.</p> <p>Lateral entry students shall also complete the bridge course courses as required. The scheme and other guidelines will be intimated to the students.</p>
6. REGISTRATION OF COURSES	
6.1	Every admitted student shall be assigned to a Faculty Advisor who shall advice and counsel the student about the details of the academic programme, rules and regulations and the choice of courses considering the students' academic background and career objectives.
6.2	Each student on admission shall register for all the courses prescribed in a semester of study.

6.3	Every student shall enrol for the courses of the succeeding semester at the end of the current semester. However, the student shall confirm the enrolment by registering for the courses before the three working days of the commencement of the concerned semester. Online registration of courses including open electives, extracurricular and co-curricular courses will be provided and students should visit the college website for details.
6.4	<i>The registration of the courses (such as professional electives, professional core, open electives etc) by the students in each semester as prescribed by the department concerned shall be completed within the stipulated period and on or before the due date prescribed. Change of professional electives and open electives will not be entertained after the due date.</i>
6.5	No course shall be offered by a Department unless a minimum of 30 students register for that core course and 20 students for elective course. After registering for a course, a student shall attend the classes, to satisfy the academic requirements for attending the semester end examinations.
6.6	The enrolment for all the courses of the even Semester will commence 10 working days prior to the last working day of odd Semester. The student shall confirm the enrolment by registering for the courses before the three working days of the commencement of the even semester. However, the student can register for courses for which the student has not enrolled, if these are the courses in which the student has failed. No change of course under any circumstances will be entertained once registration of courses is completed
7	AWARD OF DEGREE
7.1	The degree of Bachelor of Engineering will be conferred on a candidate who has pursued a "Regular Course of Study" for four academic years (three academic years for candidates admitted in II-Year under lateral entry scheme), as hereinafter prescribed in the scheme of instruction and has acquired all the credits prescribed in the scheme of examination by the department concerned.

7.2	<p>Attendance requirements:</p> <p>(a) A regular course of study for eligibility to appear Semester End Examinations (SEE) of any semester shall mean putting in attendance of <i>not less than 75%</i> aggregate in lectures, practicals, drawing, workshops, field work, project, seminars, extension etc., in the courses listed in the scheme of instruction. The cumulative monthly attendance in each course and the aggregate attendance will be displayed on the notice board.</p> <p>(b) In special cases and for sufficient causes shown, the Principal/Academic Council on the recommendation of the concerned HOD, may condone the deficiency of attendance <i>not exceeding 10%</i> for ill-health when application made for such a condonation is supported by a valid medical certificate issued by an authorized Medical Officer and approved by the Principal of the college.</p> <p>(c) <i>A student can use medical condonation facility only 4 (four) times in the entire period of 8 semesters in the span of 4 years B.E program.</i></p> <p>(d) In any semester of the course if a candidate fails to secure the minimum percentage of attendance, he/she shall not be eligible to appear for the SEE of that semester and he/she shall have to enroll himself/herself to undergo afresh a "Regular Course of Study" of the corresponding semester in subsequent academic year by paying required tuition fee, to become eligible to appear for semester end examinations.</p>
7.3	<p>Attendance for N.C.C. Camps or Inter Collegiate or Inter University or Inter State or International matches or debates or Educational excursion or such other Inter University activities as approved by the authorities, involving journeys outside the city in which the college is situated will not be counted as absence. However, such absence should not exceed (4) weeks of the period of instruction, in a semester. Students participating in the above events shall take prior permission from the authorities. Absence not exceeding two weeks, for activities like N.S.S., Inter-University Competitions and debates will be condoned if the candidate is sponsored by the University for such activities.</p>

7.4	The attendance shall be calculated from the date of admission into the course.
7.5	The candidates of I semester who were detained can seek readmission without appearing for the Entrance Test during subsequent year, and such admissions shall be treated as supernumerary.
7.6	If a candidate who has pursued a Regular Course of Study of any semester wishes to undergo the same course again, he/she may be permitted to enroll again as a regular student for the course of the semester, when next time offered, depending on the availability of seats. Such candidates shall forego the attendance secured for that semester previously. Further the candidate had not pursued a "Regular Course of Study" in any higher semester. For the award of division, however, he/she shall have the benefit of the higher of the aggregate SGPA secured in that semester.
7.7	The college working hours will be announced along with the time table and displayed on the department notice boards. To strengthen and augment the academic activities, college will work on extended hours with prior intimation to the students. All the parents are requested to cooperate in this regard.
8. SCHEME OF INSTRUCTION, EXAMINATION AND ASSESSMENT	
8.1	Instruction in the various courses in each semester shall be provided by the college as per the scheme of instruction & examination and syllabus prescribed for the branch of study approved by the Academic Council and ratified by the Board of Governors.
8.2	The students who have taken readmission (joined under the university regulations) due to detention/transfer into the college shall be allowed to pursue their program of study under Autonomous/CBCS regulations of the college. They shall clear all the backlog subjects, if any, in the equivalent subjects as identified by the Board of Studies concerned under the Autonomous/CBCS system for the award of degree. All such students shall register the courses of study as mentioned above.

8.3	The distribution of marks based on the Continuous Internal Assessment (CIE) assessment and Semester End Examination (SEE) for B.E program shall be as follows:			
	Course		Marks	
			CIE	SEE
	i)	Each theory course	40	60
	ii)	Each practical or drawing course	30	50
8.4	<p>There will be continuous and comprehensive evaluation (CIE) of students. The distribution of CIEs and semester examination marks for B.E program are given below:</p> <p><i>CIE Exams (internals/ Sessional) Theory: 40 Marks</i></p> <ul style="list-style-type: none"> • 30 Marks each for two internal examinations in a semester and 10 marks for assignments (5marks) and quizzes (5 Marks). • Three quizzes and three assignments will be conducted in a semester each for 5 marks for every course. • The internal exam question paper contains part-A, Part-B and Part-C. Internal Exam Duration: 90 minutes. The question Paper consists of <ul style="list-style-type: none"> Part-A: Contains 6 Questions of 1 mark each (6 Marks) Part-B: Contains 3 (or 4) Questions of 4 (or 3) marks each (12 Marks) Part-C: Contains 2 (or 3) Questions of 6 (or 4) marks each (12 Marks) • There is no choice in the question paper. All questions are to be answered. • Blooms Taxonomy will be followed in the question Paper Setting. <p>Average of two tests will be considered for calculating internal exams marks to which average assignment/quizz marks will be added for obtaining total CIE marks.</p>			
8.5				

	<p>Lab: 30 Marks</p> <ul style="list-style-type: none"> • 15 marks for day-to-day laboratory class work which will be awarded based on the average of all experiments. • 15 marks for the internal examination. <p><i>SEMESTER END EXAMINATIONS (SEE)</i></p> <ul style="list-style-type: none"> • Semester theory examinations will be conducted for 60 marks. A student should secure a minimum of 'D' grade in each course for a pass. • Semester laboratory examinations will be conducted for 50 marks. A student should secure a minimum of 'C' grade for a pass. • In addition, a student shall secure a minimum 'D grade in a theory course and 'C grade in lab from CIEs and semester examinations put together for a pass in a subject.
	<p>The semester end examination question paper consists of Part-A and Part- B. Part -A is compulsory and should cover the entire syllabus, and carries 20 marks. A minimum number of 10 questions of Two (2) marks each will be given in Part-A. Part B will comprises of seven (7) questions and it carries 40 marks. A student shall answer any five questions. There must be one question drawn from each unit of the syllabus and the remaining two questions may be drawn from the total syllabus of all 5 units. However, there should not be more than 2 questions from any unit. Blooms Taxonomy will be followed in the question Paper Setting.</p>
8.6	The details of instruction, examination and vacations shall be notified by the Principal.
8.7	The semester end examinations prescribed may be conducted by means of written papers, practicals and oral tests, inspection of certified CIE work in drawing and laboratories and workshop or by means of any combination of these methods as may be deemed necessary.

8.8	All the general rules for examinations shall be adhered to.																														
8.9	A student who secures ' F ' grade in <i>semester exam and sessional put together</i> will be declared failed in that semester.																														
8.10	The curriculum for any Branch of study of B.E program is designed to have total credits between 160 and 190 (for lateral entry 122-142). A student is declared eligible to receive the degree on attaining above credits shown against each program of study.																														
9	<p>OPEN ELECTIVE COURSES:</p> <p>As part of CBCS, open electives are being offered by various departments from III to V semesters of B.E. program. A total of 11 credits are for open electives to be offered under CBCS.</p>																														
9.1	<p>The Engineering Departments, Physics, chemistry, mathematics and H&SS offer one and two credit open elective courses from III to VI semesters of B.E. programs under CBCS w.e.f., the academic year 2017-18.</p> <ul style="list-style-type: none"> It is mandatory for the students to acquire 3 credits out of 11 credits from the <i>open elective courses offered by the Departments of Physics and Chemistry</i> put together. Allocation of CIE & SEE marks for open elective are given below: <table border="1" data-bbox="266 970 1005 1283"> <thead> <tr> <th rowspan="2">Year of admission</th> <th rowspan="2">Duration of SEE</th> <th colspan="2">Marks</th> </tr> <tr> <th>SEE</th> <th>CIE</th> </tr> </thead> <tbody> <tr> <td colspan="4">2016-17</td> </tr> <tr> <td>1 Credit Course:</td> <td>2 Hrs.</td> <td>35</td> <td>15</td> </tr> <tr> <td>2 Credit Course:</td> <td>3 Hrs.</td> <td>70</td> <td>30</td> </tr> <tr> <td colspan="4">2017-18</td> </tr> <tr> <td>1 Credit Course:</td> <td>2 Hrs.</td> <td>30</td> <td>20</td> </tr> <tr> <td>2 Credit Course:</td> <td>3 Hrs.</td> <td>60</td> <td>40</td> </tr> </tbody> </table>	Year of admission	Duration of SEE	Marks		SEE	CIE	2016-17				1 Credit Course:	2 Hrs.	35	15	2 Credit Course:	3 Hrs.	70	30	2017-18				1 Credit Course:	2 Hrs.	30	20	2 Credit Course:	3 Hrs.	60	40
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10.	<p>PARTICIPATION OF STUDENTS IN CO-CURRICULAR AND EXTRA-CURRICULAR ACTIVITIES:</p> <p>The students of B.E. should complete the prescribed credits through the courses offered under HS, BS, ES, PC, PE, OE, MC,</p>																														

	and project by the department concerned. To become eligible for the award of degree, students should also participate in co-curricular and extra-curricular activities as set by the individual departments.			
10.1	<p>To become eligible for the award of degree, students should also participate in the following activities:</p> <ul style="list-style-type: none"> • 04 extra-curricular activities (from III to VI semesters) • One paper presentation at 5th Semester • One Theme-based project report submission at 6th Semester • All co-curricular activities offered by the respective Departments. • One certification course amongst the courses prescribed by the Department from MOOCS offered by IIT's, NPTEL, Edx, Course Era etc., • <p>A student can choose any one of the extra-curricular activities out of 12 to 14 listed activities in a semester and should complete 4 (four) such extra-curricular activities from III to VI semesters. The co-curricular activities including professional body activities will be announced by the Engineering departments concerned.</p>			
10.2	The extra-curricular activities are organized under various clubs including the following clubs:			
	S. NO	NAME OF THE CLUBS	S. NO	NAME OF THE CLUBS
	1	The Speak Easy	7	The General Quiz Club
	2	The Literary Club	8	The Math Quiz Club
	3	The Toast Masters' Club	9	The Chemistry Club
	4	The Dramatics Club	10	The Physics Club
	5	The Art Club	11	The Entrepreneurs Club
	6	The Eco Club	12	The Photography / Films Club
10.3	The above-mentioned activities come under audit courses with no credits attached. However, attendance to the activities is mandatory to encourage student participation and a student shall secure minimum of 75% attendance in these activities.			

11. RULES OF PROMOTION FOR B.E	
Semester	Conditions to be fulfilled
I-SEM to II-SEM	Regular course of study of I-SEM and 40% aggregate CIE marks in I-SEM
II-SEM to III SEM	a. Regular course of study of II SEM and
	b. 40% aggregate CIE marks in II- SEM
	c. Must have secured at least 50% of total credits prescribed for I and II SEMs together
III-SEM to IV-SEM	a. Regular course of study of III-SEM and
	b. 40% aggregate CIE marks in III- SEM
IV-SEM to V- SEM	a. Regular course of study of IV SEM
	b. 40% aggregate CIE marks in IV- SEM
	c. Passed in all the courses of I and II SEMs
	d. Must have secured at least 50% of total credits prescribed for III and IV SEMs put together
V-SEM to VI-SEM	Regular course of study V-SEM, and 40% aggregate CIE marks in V- SEM
VI-SEM to VII-SEM	a. Regular course of study of VI-SEM
	b. 40% aggregate CIE marks in VI- SEM
	c. Passed in all the courses of III and IV SEMs.
	d. Must have secured at least 50% of total credits prescribed for V and VI SEMs put together
VII-SEM to VIII-SEM	Regular course of study of VII-SEM and 40% aggregate CIE marks in VII-SEM
12. CREDITS AND GRADES:	
12.1	Credit system will be implemented in each semester. The credit hours for each theory course, laboratory sessions, finishing school and project work are clearly mentioned in the scheme of instruction.
12.2	Absolute/Relative grading system is adopted in awarding the letter grades. The marks are converted to grades based on pre-determined class interval. As per the UGC recommendations a 10-point grading system with the following letter grades are used:

Academic Performance (%)	Letter Grade		Grade Points
90 to 100	A+	Outstanding	10
80 to 89.99	A	Excellent	09
70 to 79.99	B+	Very Good	08
60 to 69.99	B	Good	07
50 to 59.99	C	Average	06
40 to 49.99	D	Pass	05
0.00	Ab	Absent	Ab
Below 40 (Theory).	F	Fail	0
Below 50(Laboratory)	F	Fail	0

12.3	A Relative grading system will be implemented for computing semester grade point average (SGPA) and Cumulative grade point average (CGPA). The college will follow relative grading with flexibility given of ranges for grades.
12.4	For non-credit courses letter grade secured will not be considered while computation of SGPA/CGPA. No SGPA/CGPA is declared, if a candidate is failed in any one of the courses of a given semester.
12.5	GRADES: THEORY AND LABORATORY COURSES The final grades in a semester will be computed based on aggregate marks of CIE and semester end examinations in a course put together. A student who earns a minimum of 4.5 grade points and above in a theory course and 5.00 in a laboratory is declared to have successfully completed the course.
12.6	The Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) shall be computed considering the credits and grades secured by a student in CIE and semester examinations marks put together.
12.7	COMPUTATION OF SGPA AND CGPA A. The SGPA is the ratio of sum of the product of the number of credits and the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student in a semester i.e.

	<p style="text-align: center;">SGPA (S_i) = $\Sigma(C_i \times G_i) / \Sigma C_i$</p> <p>where C_i is the number of credits of the i^{th} course and G_i is the grade point scored by the student in the i^{th} course.</p> <p>B. The CGPA is calculated in the same manner considering all the courses undergone by a student over all the semesters of a programme, i.e.</p> <p style="text-align: center;">CGPA = $\Sigma(C_i \times S_i) / \Sigma C_i$</p> <p>where S_i is the SGPA of the i^{th} semester and C_i is the total number of credits in that semester.</p> <p>C. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.</p>
12.8	<p>CONVERSION OF GRADES INTO PERCENTAGE</p> <p>Conversion formula for the conversion of GPA into indicative percentage is</p> <p style="text-align: center;">$[\text{CGPA Earned} - 0.50] \times 10 = \% \text{ of marks scored.}$</p> <p>Illustration: $[\text{CGPA Earned } 7.5 - 0.50] \times 10 = 70.0\%$</p>

13. INDUSTRIAL TRAINING/INTERNSHIP

The students may undergo Industrial Training for a period as specified in the curriculum during summer / winter vacation. The number of credits shall be assigned as detailed below. The students may undergo internship at research organization / university/ industry for the period prescribed in the curriculum. In such cases, Industrial Training / Internship needs to be undergone continuously from one organization only. The student can undergo maximum of 3 months during the entire duration of study.

Duration of Training / Internship	Credits
2 Weeks	1
4 Weeks	2
6 Weeks	3

14. ADD AND DROP CREDITS

14.1	A student should earn the total number of credits specified in the curriculum of the respective program of study to be eligible to obtain the degree.
14.2	If the student wishes, then he/she may be permitted to earn more than the total number of credits prescribed in the curriculum of program. However, the total number of additional credits registered cannot exceed six (6). Also, the number of courses registered by a student in a semester cannot exceed 28 credits.
14.3	The student has the option to register for additional courses or dropping existing courses from third semester onwards.

15. AWARD OF DEGREE/DIVISION

To obtain degree, the student shall have passed in all the courses and secured the number of credits as prescribed in the course structure of program offered by department concerned and should obtain a CGPA of at least 4.5 and shall not have any disciplinary actions pending against him/her. The award of division secured in the degree on 10-point scale is given below:

CGPA SCORE	DIVISION AWARDED
7.50 and above (10.00-7.50)	First Division with distinction
6.50 and below 7.50	First Division
5.50 and below 6.50	Second Division
4.50 and below 5.50	Pass division
Below 4.50	Fail

16. GENERAL RULES OF EXAMINATION

16.1	All examinations shall be held at such places as it may be decided and at such other centers of such dates as may be notified.
16.2	Application for permission to appear at every examination shall be made on the prescribed form accompanied by three passport size full face photographs (not profile) which along with the necessary certificates regarding attendance, practical work, etc., and the prescribed fee, should be sent to the Controller of Examinations on or before the date fixed for this purpose.

16.3	When a candidate's application is found in order and he/she is eligible to appear for the examination, the Controller of Examinations, shall furnish the candidate with a Hall -Ticket affixing the photographs on it to enable the candidate to appear for the examination. Candidates shall have to produce Hall-Ticket for admission into the premises where the examination is being held or to a part of the said premises as well as to the Examination Hall.
16.4	A candidate who fails to attend the examination for any reason whatsoever under any circumstances shall not be entitled to claim refund of the whole or any part of the examination fee nor adjust it for subsequent examinations.
16.5	A candidate after declared successful in the whole examination, shall be given a certificate indicating the year of examination, the courses in which he/she was examined and the division in which he/she was placed.
16.6	No candidate shall be allowed to appear at examinations for different degrees and different faculties simultaneously.
16.7	Students, who have appeared once at any examination of the course, need not put in fresh attendance, if they want to reappear at the corresponding examination, notwithstanding the fact that new courses may have been introduced by the college. They will however, should appear at the examinations according to the scheme of examination and syllabus in force.
17.	ADVANCE SUPPLEMENTARY AND MAKE-UP EXAMINATIONS
17.1	To decrease the backlog load on the students who failed to clear one or more courses in the even semester and to give equal chances for appearing examinations in odd and even semesters, Advance Supplementary examinations for even semester (II, IV and VI) will be conducted immediately after declaring the results of even semester by giving proper time for preparation.
17.2	Since the supplementary examinations of even semesters which are being held during the months of November/December are being advanced to June/July

	months, supplementary examinations for the even semesters henceforth will not be conducted.
17.3	If the candidate is declared to have passed in the revaluation of the main examination, then the result of Advanced Supplementary examinations shall not be considered even if the student appeared for the said exam.
17.3	Make- Up examinations will be conducted for the students having backlog courses at VIII semesters of 4 th year B.E immediately after release of regular examinations results of VIII semester.

18. IMPROVEMENT OF DIVISION

18.1	A candidate who wishes to improve his/her division may do so within one academic year immediately after having passed all the examinations of BE Degree Program by reappearing at not more than two semesters (All courses pertaining to the semester taken together) examinations. For the award of the division, he/she will have the benefit of the higher SGPA secured in the corresponding semesters.
18.2	In case of candidates who have secured CGPA less than 4.5 of total aggregate of all eight semesters needed for a pass division, the candidate can appear for improvement in individual courses to become eligible for a PASS Division within one academic year in any two semesters.

19. TRANSITORY REGULATIONS

Whenever, course or scheme of instruction is changed in a particular year, two more examinations immediately following thereafter, shall be conducted according to the old syllabi/regulations. Candidates not appearing at the examinations or failed shall take the examination subsequently according to the revised syllabi/regulations.
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20. SCHEDULE ON THE NATURE OF MALPRACTICE AND AWARD OF PUNISHMENT

S.No	TYPE OF MALPRACTICE	PUNISHMENT TO BE AWARDED
1	Possession of the prohibited (written or printed) papers, books, notes during the examination period but which were not used.	Shall be debarred from appearing at the subsequent papers of the examination apart from cancelling the result of the examination (" Examination " in this context refers to all the papers taken by the candidate on the same Hall Ticket) in which he/she had indulged in malpractice.
2	Matter relevant to the examination being written on any part of the body or on the clothes worn, or in the instruments, wrappings, etc.	
3	Attempting to take help from any prohibited papers, notes, written or printed matter, writings on the walls, furniture, mobile phones / electronic gadgets and attempting to take help from or giving help to other regarding answer to any question or questions of the examination paper.	
4	Taking help from mobile phones / electronic gadgets or consulting of prohibited written or printed material; consulting and / or taking help from or helping other examinee during the examination period inside the examination hall or outside it with or without their consent, or helping other candidate to receive help from anyone else.	

5	An examinee who attempts to disclose his/her identity to the paper valuer by writing his/her Hall Ticket Number at a place other than the place prescribed for it, or by writing his/her name or any coded message or an examinee who makes an appeal to the paper valuer in the answer book.	Cancelling the result of that paper.
6	Using abusive and obscene language in the answer book.	
7	Refusing to obey instructions of the Chief Superintendent/Invigilator.	
8	Writing on the question paper or other papers the answer to questions, rough work etc., with no intention of passing it on to another examinee.	To be warned not to do so.
9	Examinee swallowing or destroying prohibited material found in his/her possession or acting in any other manner with a view to destroy evidence.	Cancellation of the result of all examinations taken or proposed to be taken during that session and prohibiting his/her admission into or continuation in any course of the Institution for a period of one year.
10	Smuggling an answer book / additional answer book / matter into or out of the examination hall.	
11	Inserting in or removing from the answer book / additional answer book of any sheet.	
12	Substituting wholly or partly an answer book / additional answer book.	
13	Cases of examinees when conspiring to interchange their Hall Ticket Numbers.	

14	Creation of disturbance or otherwise misbehaving in and around the examination hall during or before the examination.	Cancelling the results of all examinations taken or proposed to be taken during that session and prohibiting admission into or continuation in any course of study for a period of two years.
15	Guilty of assaulting / abusing, intimidating any person connected with the examination work any time-before, during or after the examination.	Cancelling the results of all examinations taken or proposed to be taken during that session and the next session and prohibiting admission into or continuation in any course for a period of two years.
16	Impersonation even at a single examination.	<p>a) The case of impersonation to be dealt with as per law in respect of the candidate who has impersonated (Imposter) and the candidate who is impersonated (original candidate).</p> <p>b) The candidate who has impersonated (Imposter) shall be expelled from examination hall. He/She (Imposter) is also debarred and forfeits the seat.</p> <p>c) The performance of the original candidate shall be cancelled in all the examinations (including Practicals / Project work) if any appeared by him/her and shall not be allowed to write remaining subjects of that semester. He/She shall also forfeit the result(s) of other semester(s) registered along with the examination in which the offence was committed.</p> <p>d) The original candidate be debarred from two consecutive semesters from class work and all examinations conducted by the Institution.</p>

		<p>e) Continuation of the course by the original candidate shall be subject to the academic regulations in connection with forfeiture of seat.</p> <p>f) In case if the original candidate would like to discontinue the course immediately after the punishment is awarded, he/she shall be permitted to discontinue only after the completion of punishment period.</p>
17	Any other Malpractice not defined above.	As recommended by the Committee constituted to look into the cases of malpractices.

NOTE: *"EXAMINATION"* in this context refers to all the papers taken by the candidate on the same Hall Ticket.

AWARDS AND REWARDS

GOLD MEDALS

Vasavi Academy of Education has instituted Gold Medals to the toppers of each branch based on their cumulative performance in the University Examinations from 1st year to final year. Gold Medals have also been instituted by the industry partners, alumni, parents and individuals.

The members of Vasavi Academy, Alumnus of VCE, and reputed software organizations have instituted sixteen gold medals, in various branches of study for the best outgoing students (toppers) based on their performance in the Osmania university examinations.

1. Sri.Pendekanti Venkata Subbaiah Memorial Gold Medal to the best student amongst all the branches of engineering put together.

2. Sri P. Dharma Reddy Gold Medal to the best student amongst of all branches.

- 3. Dr.K.V.Subba Rao Gold Medal** to the best student amongst the outgoing students of all branches put together.
- 4. Smt.Kanakamma Venkata Subbaiah Gold medal** to best girl student amongst all branches put together
- 5. Prof. G.Lakshmi Narayana Gold Medal** to the student of Civil Engineering branch who secures highest marks in that branch.
- 6. M/s SatNav Technologies Ltd Gold Medal** to the best student of GIS among the Civil Engineering students
- 7. Sri. G.Narayana Chetty, IAS (Retd) Gold Medal** to the student who secures highest marks in Mechanical Engineering branch.
- 8. Sri. A. Ravi Kiran Memorial Gold Medal** to the student who scores highest marks in Mechanical Engineering branch.
- 9. Prof. K.Venkataramaiah Memorial Gold Medal** to the topper in Production Engineering.
- 10. Sri.K.R.Krishnaiah Chetty Memorial Gold Medal** to the academically best student in ECE branch.
- 11. Sri.K.R.Gupta Gold Medal** to the *student* who secures highest marks in CSE branch.
- 12. Dr.T.B.G.Tilak Memorial Gold Medal** to the student who gets highest marks in EEE branch.
- 13. Sri.Sikakollu Subba Rao Memorial Gold Medal** to the student who scores highest marks in Information and Technology (IT) branch.
- 14. Sri. K. Rosaiah Gold Medal** to the top scorer in MCA.
- 15. Sri A. Venkata Ramana Memorial Gold Medal** to the best student who secures the highest marks in M.E (ES&VLSID) course.
- 16. Smt. & Sri. Eskala Pedda Ratnaiah Memorial Gold Medal** to the best student who gets the highest marks in M.E (AD&M) course.
- 17. Dr. D. Changal Raju Memorial Gold Medal** to the best student with highest marks in B.E, ECE branch.

YOUNG LEADER AWARD

In memory of Mr. Harshavardhan Podipireddy, an ex-student of Mechanical (Production) Engineering, his parents have instituted an 'Award for Young Leader' with a cash prize, to be awarded to one student in each branch of engineering, among the final year students.

The students are given an opportunity to apply for the award with their contribution in 5 major areas viz., academic-marks secured, attendance secured, participation in curricular activities, participation in extracurricular activities, leadership activities. After evaluating the applications received and based on the outstanding contributions made by the applicants, the students are selected for the award.

MERIT AWARDS

To encourage meritorious students ***Best Academic Performance Awards*** are given to top 3 students of each section, for all the courses, based on their performance in the semester examination in the preceding year. Students securing first, second and third positions in their sections are awarded with cash prizes. The amount is to be given to the parent of the student in the form of a cheque.

BEST PROJECT AWARDS

Innovative, creative and research oriented projects are awarded suitably. These awards are given to the final year students. To encourage the students to carry out such projects in each branch, the management has decided to give the first and second best project prizes. The best project and second best project receive a cash prize.

BEST ATTENDANCE AWARDS

In order to encourage the regularity among the students, the best Attendance Awards rejuvenated on their percentage of attendance. Students having 100%, 99% and 98% attendance are given cash awards

REWARDS

Cognizant Technology Solutions has instituted an award for the best outgoing student.

REIMBURSEMENT OF CONFERENCE REGISTRATION FEE

Students are encouraged to participate and present papers in National/International Conferences/ seminars. College reimburses pay back the conference/seminar registration fee to the students who present meritorious papers in the conferences.

MERIT-CUM-MEANS SCHOLARSHIPS

The Management of Vasavi College of Engineering provides Merit-cum-Means Scholarships to the needy students.

FINANCIAL ASSISTANCE

Financial assistance to the economically poor students is available on the basis of merit-cum means. The circulars are issued from time to time inviting the applications in every academic year.

Guidelines for Financial Assistance

1. Students who are economically weak are considered for financial assistance.
2. The financial assistance is be provided to the eligible students with a condition that the assistance received shall be paid back after getting employment in equal installments over a period of two years. The amount received back is credited to a separate fund (financial assistance fund) in the College which is utilized for assistance to subsequent batches of students. This account is operated for any contribution received from the staff and any other philanthropists for this good cause.
3. The needy students are identified by the "Department Financial Assistance Committee" that comprises the respective HODS, one senior faculty and two students from each branch. The short listed eligible students get the financial assistance.

TRANSPORT FACILITIES- GENERAL MODE

All the students are eligible for the General Bus Pass. The APSRTC buses 120S, 120N, 220J, 220V ply from Mehdiapatnam 'X' Roads to the college. For Fresh Bus Passes, students should apply during 21st to 29th of every month and for renewal during 13th to 17th of every month at all APSRTC Bus Pass Centres and e-Seva Centres.

FIRST YEAR STUDENTS - HIRED BUS TRANSPORT

Private buses are under hire exclusively for I year B.E students of the College. More buses can be arranged in other routes, if the strength of the students in that particular route is 60. Presently the buses are operating to the College from various place of the hyderabad-secuderabad twin cities. The Buses start at their respective destinations at 8.00AM in the morning and leaves the college in the evening at 4.40PM. The details of the routes are given below:

ROUTE	VIA
ECIL 'X' Roads - VCE	Naredmet 'x' Roads, Malkajigiri, Mettiguda, Sangeet, Patny, Paradise, Tankbund, Secretariat, Lakadikapool, Mehdipatnam.
Vanasthalipuram Red Tank - VCE	Panama, L.B. Nagar, Kothapet, Dilsukhnagar, Malakpet, Koti, Abids, Nampally, Public Gardens, Lakadikapool, Mehdipatnam.
Ramanthapur HPS - VCE	Uppal 'x' Roads, Habsiguda, Tarnaka, Adikmet, Vidyanagar, Shankermutt, Nallakunta Narayanaguda, Himayathnagar, Liberty, Lakadikapool, Mehdipatnam, Nanalnagar
K.P.H.B. (JNTU) - VCE	Kukatpally, Moosapet 'x' Roads, Erragadda, S.R.Nagar, Punjagutta, NIMS, Erramanjil Colony, Banjara Hills, Masab Tank, NMDC, Mehdipatnam, Nanalnagar
B.H.E.L. (Lingampally) - VCE	Chandanagar, Gangaram, Madinaguda, Alwyn 'x' Roads, Miyapur, Nizampet x Roads, JNTU, Malaysian Town ship, Hitech City, Mindspace, Gachibowli, Outer Ring Road, Narsing
Chilkaiguda (Sec'bad Station) - VCE	Musheerabad, RTC 'x' Roads, VST, Bagh Lingampally, Tourist Hotel, Kachiguda, YMCA, Old MLA Quarters, Basheerabagh, Lakadikapool, Mehdipatnam
ALWAL (Indira Gandhi Statue) – VCE	Lothukunta, Tirumalgiri, Kharkhana, JBS, Patny, Begumpet, Punjagutta, Nagarjuna Circle, Banjara Hills, Masab Tank, NMDC, Mehdipatnam, Piilar No.68, Langarhouse
Sagar Ring Road – VCE:	Karmanghat, Chempapet, Santoshnagar, Owaisi Hospital, Midhani 'x' Roads, Chandrayana Gutta, Aramghar 'x' Roads, Rajendranagar, Attapur, VCE

TRANSPORT FACILITY FOR SENIOR STUDENTS

Nine T.S.S.R.T.C exclusive buses are arranged for the senior students in the following routes

ROUTES	
1	Secunderabad (8.30 AM) to VCE Via. Bata, Tankbund, Secretariat, Lakdikapul, Mehdiapatnam.
2	Secunderabad (8.30 AM) to VCE Via. Paradise, Begumpet, Punjagutta, Banjara Hills, Mehdiapatnam.
3	RTC 'x' Roads (VST Bus Stop) to VCE Via. Sankarmutt, Nallalunta, Barkatpura, Narayanaguda, Himayathnagar, Lakdikapul, Mehdiapatnam.
4	RTC 'x' Roads (VST Bus Stop) to VCE Via. Sankarmutt, Nallalunta, Barkatpura, Narayanaguda, Old MIA Qtrs, Control Room, Lakdikapul, Mehdiapatnam.
5	Taranaka to VCE Via. Adikmet, Nallalunta, Narayanaguda, Himayath Nagar, Liberty , Secreteriat, Lakdikapul, Mehdiapatnam.
6	Dilsukhnagar to VCE Via. Malakpet, Nalgonda 'x' Roads, Koti, Abids, Nampally, Lakdikapul, Mehdiapatnam.
7	Dilsukhnagar to VCE Via. Malakpet, Nalgonda 'x' Roads, Koti, Abids, Nampally, Lakdikapul, Mehdiapatnam.
8	A.G.Colony (ESI Bus Stop) to VCE Via. Ameerpet, Punjagutta, Lakdikapul, Mehdiapatnam.
9	A.G.Colony (ESI Bus Stop) to VCE Via. Ameerpet, Punjagutta, Banjara Hills, Mehdiapatnam.

STAFF BUSES (including Senior Students) 2017-18

Route	Name of the Route	Enroute Stages
I	Nagole 'x' Roads - VCE	Uppal 'x' Roads, Ramanthapur HPS, Amberpet 'x' Roads, 6 No., Shivam Road, Vidyanagar 'x' Roads. VST, RTC 'x' Roads, Ashok Nagar, Indira Park, Telugutalli Flyover, Lakdikapool, Mehdipatnam, VCE
II	Uppal 'x' Roads - VCE	Survey of India, Habsiguda, Tarnaka, Adikmet, Vidyanagar, Shankermutt, Fever Hospital, Narayanguda, Himayathnagar, Liberty, Secretariat, Lakdikapool, Mehdipatnam, VCE
III	ECIL 'x' Roads - VCE	Naredmet 'x' Roads, Vinayak Nagar, Anandbagh, Malkajigiri, Mettiguda, Chilkalguda 'x' Roads, Kawadiguda, Lower Tank Bund, Lakadikapool, Mehdipatnam, VCE
IV	Bowenpally - VCE	Paradise, Patny, Sangeet, Bata, Tankbund, Secretariat, Lakadikapool, Mehdipatnam, VCE.
V	Chinthalakuntha Check Post – VCE	L.B. Nagar, Kothapet 'x' Roads, Chaitanyapuri, Dilsukhnagar, Malakpet, Koti, Abids, Nampally, Public Gardens, Lakadikapool, Mehdipatnam, VCE
VI	Vanasthalipuram Red Tank - VCE	L.B. Nagar, Kothapet 'x' Roads, Chaitanyapuri, Dilsukhnagar, Malakpet, Koti, Abids, Nampally, Public Gardens, Lakadikapool, Mehdipatnam, VCE
VII	B.N.Reddy Nagar - VCE	Vanasthalipuram Red Tank, NGO'S Colony, B.N. Reddy Nagar, Hasthinapuram, Sagar Ring Road, Karmanghat, Chempapet, Santhoshnagar, Owaisi Hospital, Midhani 'x' Roads, Chandrayangutta, Aramghar 'x' Roads, Rajendranagar, Attapur, VCE
VIII	KPHB(JNTU) - VCE	Vivekananadnagar Colony, Kukatpally, Moosapet 'x' Roads, Erragadda, ESI, S.R.Nagar, Ameerpet, Punjagutta, NIMS, Krishna Oberai, Banjara Hills, Pension Office, Masab Tank, NMDC, Mehdipatnam, VCE.

IX	BEERAMGUDA - VCE	Lingampally 'x' Roads, Chandanagar, Gangaram, Madinaguda, Alwyn 'x' Roads, Miyapur 'x' Roads, Hafeezpet, Kondapur, Kothaguda 'x' Roads, Gachibowli, Outer Ring Road, Narsing, VCE.
X	HYDERGUDA - VCE	Nizampet 'x' Roads, JNTU, Malasyan Town Ship, Hitech City, Mindspace, Gachibowli, Outer Ring Road, Narsing, VCE.
XI	ALWAL (Indira Gandhi Statue) – VCE	Lothukunta, Tirumalagiri, Kharkhana, JBS, Patny, Paradise, Begumpet, Punjagutta, NIMS, Erramanazil Colony, Taj Krishna, Pension Office, Masab Tank, NMDC, Mehdipatnam, VCE
XII	Mehdipatnam – VCE	Humayun Nagar P.S., Mehdipatnam, Retibowli, Pillar No.68, Olive Hospital, Langar House, VCE

RULES OF CONDUCT TO STUDENTS

1. The college premises and buildings shall be kept clean; writing and sticking posters and notices on the building walls is strictly prohibited.
2. Students are not permitted to resort to strikes and demonstrations within the college. Participation in any such activity shall automatically result in their dismissal from the college.
3. No student unions, except professional associations, are permitted in the college.
4. Any student responsible for bringing outsiders into the college campus for settling student disputes will be expelled from the college.
5. The students may go on Industrial Tours at their expenses. The college will not defray any expenses of the tour.
6. Smoking, consumption of alcoholic drinks, gambling of any kind is prohibited in the college premises. Any student found in the college premises in an intoxicated condition at any time will be summarily expelled from the college without any enquiry.
7. The students are expected to be regular in their class work and should conduct themselves in a disciplined manner. They should abide by such rules of discipline and conduct as stipulated by the college from time to time.

8. Fees must be paid in one instalment within two weeks of 1st Semester in the College. Fine at Rs.20/- per day will be levied for delayed payment upto 2 weeks, after which name will be deleted from rolls. Later Readmission fee will be Rs.500/- in addition to fine dues. Fee once paid will not be returned under any circumstances. Non payment of fees will result in forfeiture of his/her seat in the college.
9. The principal of the college is the final authority as regards the discipline in the institution and has full powers to suspend, fine, rusticate and take any other action, which is deemed necessary.
10. The conduct of the students should be exemplary, not only within the premises of the college but also outside.
11. The students are informed that they should furnish the latest addresses of their parents/guardians in the Principal's Office. Any change of address of the parents/guardian should also be informed immediately, in the college office.
12. Ragging is prohibited. Any student participating in ragging is liable to be summarily expelled from the college without any enquiry. Ragging on campus and off campus is strictly prohibited and it is a cognizable offence. The college has constituted Anti-Ragging Committee, vigilance teams, anti-ragging squads involving the police officers, senior faculty, etc., as per the Act.

DEPARTMENT PROFILES

DEPARTMENT OF CIVIL ENGINEERING

The Civil Engineering Department was established in the year of college inception (1981). It offers B.E. civil engineering course with an annual intake of 60 students.

MISSION

To impart knowledge in the latest technologies to the students of civil engineering to fulfil the growing needs of the society."

FACULTY

Dr. B. Sridhar is Professor and Head of the Department. It has 20 faculty members. The Civil Engineering Department is actively engaged in research and consultancy activities in the areas of cement and

concrete technology and concrete structures. Research projects on Blended Cements, Concrete Composites like Fibers Reinforced Concrete with various types of fibers like steel, glass, polypropylene etc., GFRP, H.P.C., Light Weight Concrete, Non-Destructive Testing of Structures etc., are in progress and a few have been completed.

To strengthen the knowledge beyond the curricula and to expose the students to the latest trends in the industry Professional Practice School is being implemented.

INFRASTRUCTURE

The Civil Engineering Department is spread in an area of 2,134 Sq. Mtrs. to cater to the needs of classrooms, laboratories and other common facilities. The department possesses 32 computer systems.

The various Civil Engineering Laboratories - the Concrete Lab, Soil Mechanics Lab, Transportation Engineering Lab, G.I.S Lab, Computer Lab, etc., are equipped with modern equipment. It has ideal facilities for research like concrete compression testing machine (Digital) of 300 KN capacity, permeability testing apparatus, non-destructive testing equipment, loading frame of 400 KN capacity, computerized triaxle testing equipment, standard penetration test apparatus, UV-spectra- photometer etc. The Computer center of the department has all the modern GIS, structural analysis and Design packages.

The Department has a good interaction with outside agencies and is carrying out consultancy activities for various public and private agencies on structural design, proof checking, quality testing of structures, cement

concrete roads, B.T roads, laboratory material testing of cement, concrete including mix design, highway materials, steel roads etc., Soil Testing of Field samples, Field Surveying GIS mapping, water analysis etc., are also being regularly carried out.

Many of our students have been placed in software, GIS and construction companies. Some of our students are pursuing higher education abroad and in India.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

The Department of Computer Science & Engineering was started in the year 1994 offering, a 4-year B.E. course and the present annual intake is 120 students and a 2-Year M.Tech course in the year 2011 with an annual intake of 18 students.

FACULTY

Dr. T. Adilakshmi, Professor and Head of the Department, has 27 years of teaching experience. The department has 27 well-qualified & experienced faculty members. Osmania University has recognized the department as a Research Center and two professors are recognized as Research Supervisors. The faculty members have varied academic interests and some of their specialized fields include Data Mining, Artificial Intelligence, Grid Computing, Image Processing, Cloud Computing etc. The department has been associated with eminent industries to carry-out research/consultancy work.

MISSION

To enable students to develop logic and problem solving approach that will help build their careers in the innovative field of computing and provide creative solutions for the benefit of society.

INFRASTRUCTURE

The department has a carpet area of **1585** sq.mtrs. to accommodate the needs of classrooms, laboratories and other common facilities. The laboratories are well equipped with computers of latest configuration. There are four UG, one PG and one research labs consisting a total of 164 systems. The various servers in the server room which includes, Oracle 11g Database Server, Intranet Server (TOMCAT), Oracle 11g Database Automation Server, NPTEL Video/Web Server, Mat Lab Server 2011 R2, Proxy Server, Red Hat Linux 5.0 Server, Library Automation Server, Symantec Protection Enterprise Edition 3.02, Rational Rose Server, Informatica Server all connected to the LAN thereby providing diverse

computing platforms to the students across the campus. The college has high speed internet connectivity throughout the campus through a leased line from BSNL with 30Mbps and Beam telecom with 10Mbps. To facilitate research, the department also has

1. Aneka.NET Cloud computing software version 3.0 enterprise edition site user license
2. MATLAB Perpetual concurrent license academic version

INDUSTRY INSTITUTE INTERACTION

The College has signed MoUs with prominent IT-related organizations: Microsoft, EMC Corporation, Computer Associates, Pega systems India Ltd., Infosys, Progress Software, CSC, Merxius Software, Navaratan Technologies. These partnerships help the students meet the highly competitive standards of the industry by keeping them abreast with the advances in technology through training programmes, student internship and projects, lectures by professionals/experts from the industry. The department in association with Infosys, conducts Infosys Campus Connect foundation programme for students placed in Infosys from our college. EMC Corporation provides the students to take up certification in the Storage & Cloud domains.

CONTENT BEYOND SYLLABUS

CSE Department also offers content beyond the syllabus in the form of MECR (Massively Empowered Classrooms) in association with Microsoft and QEEE (Quality Enhancement in Engineering Education) under MHRD.

VALUE ADDED COURSES

CISCO Local Academy enables students to meet the contemporary market demands in the area of Computer Networks. The department has a CSI Student chapter to facilitate students for interaction with the industry and academia through seminars/workshops/expert lectures.

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONENGINEERING

Established in **1981**, the department offers 4-year B.E. Degree Programme in Electronics & Communication Engineering, with an annual intake of 120 students. It also offers two M.E. Programmes, Embedded Systems & VLSI Design and Communication Engineering & Signal Processing of two years duration each. There are 167 computers located in various labs of the department.

FACULTY

Dr. K Jaya Sankar is Professor and Head of the Department. The Department has 32 experienced faculty members comprising Professors, Associate Professors and Assistant Professors and industry professionals. The faculty has teaching expertise in various specializations like Signal Processing, Communications, Digital Systems, VLSI Design, Microwaves etc.

INFRASTRUCTURE

The ECE Department is spread in an area of 2,701 Sq. Mtrs. in a separate block to cater to the needs of classrooms, laboratories and other common facilities. The Department has 13 laboratories as per the curriculum which includes 4 advanced laboratories. The laboratories are as per the curriculum such as Basic Electronics, Analog Electronics Circuits, Digital & Integrated Circuits, Communication, Microwave Engineering, Signal Processing & Microprocessors and Interfacing.

MISSION

"To inculcate a spirit of scientific temper and analytical thinking, and train the students in contemporary technologies in Electronics & Communication to meet the needs of the industry."

The advanced labs are

- VLSI Lab with Mentor graphics and Cadence tools.
- Digital Signal Processing Lab with MATLAB
- Communication engineering lab with wireless communications trainers.
- Microprocessor and Microcontroller Lab equipped with X86, ARM & micro controllers like 8051 etc., along with Proteus VSM microcontroller simulation software.

The Department maintains a robust association with the industry for student training, student projects, faculty visits, expert lectures, and for collaboration in research and development in emerging technologies. The department is associated with the major industries like NVIDIA Graphics, Veda IIT, Cypress,

AMS, ANURAG, DLRL, etc. The department has research projects funded by DLRL& RCI

The Department has an IEEE student branch, IETE student Forum and IE(I) chapter to facilitate effective interaction with the industry and academia through seminars / symposia / workshops. The ECE students have been consistently securing top university honours among the affiliated colleges of Osmania University. A good number of ECE students have been offered employment both by IT and Core Electronics Engineering Companies in the campus selections.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

The department of EEE was established in 1999. It offers a 4-year B.E. Degree Programme in Electrical & Electronics Engineering (EEE) with an annual intake of 60 students and one M.E programme in power systems and power electronics.

MISSION

"To impart knowledge to electrical engineering students so that they have the skills to innovate, excel and lead in their professions with values for the benefit of the society."

FACULTY

Sri K.V. Ramana Murthy is Professor and Head of the Department. The department has 16 qualified and dedicated faculties comprising Professor, Associate Professors and Assistant Professors and also industry professionals. The faculty has teaching expertise in various specializations like Power Electronics & Drives, Power Systems & Electrical Machines, Renewable Energy Sources and Control Systems. The department has 41 computer systems at its disposal.

INFRASTRUCTURE

The EEE Department is spread in an area of 1,967 Sq. Mtrs. to cater to the needs of classrooms, laboratories and other common facilities. The Department is equipped with 8 labs, departmental library, classrooms, tutorial rooms and a seminar hall with modern teaching aids and staff rooms. The laboratories equipped to suit the modern curriculum requirements. Some of laboratories in the department are Electrical Machinery Labs, Power Systems Lab, Power Electronics Lab and Control Systems Lab, Electrical Circuits & Measurements Lab and Electrical Simulation Lab. The Department has good rapport with the renowned organizations like Bharat Heavy Electricals Limited (BHEL), National Thermal Power Corporation (NTPC), Power Grid Corporation of India Limited, Central Power Research Institute (CPRI), Railway Loco Workshop, Vijay

Electricals Limited, Medha Servo Drives, Siemens India Limited, GE Enterprises, etc. These links help the students to better equip with latest trends in electrical and electronic industry.

DEPARTMENT OF INFORMATION TECHNOLOGY

The IT department was established in the year 2000. It offers a 4 year undergraduate programme B.E. in Information Technology with an annual intake of 120 students. The curriculum of I.T. emphasizes the ongoing *Convergence of Computers, Communications*. The programme ensures that the student effectively

MISSION

To enable the students, acquire outstanding competence and skills in latest IT related technologies through practice-oriented teaching and training.

meets the highest benchmarks of competence required by the industry. The unique feature of IT curriculum is 4 Mini projects (2nd yr. I & II Sem. & 3rd yr. I & II Sem.) included in the curriculum in addition to the Main Project in Final year. The students of our department have been selected by leading domestic and multinational companies like Microsoft, Teradata, CTS, Accenture, Capital IQ, Oracle, Pega systems, TCS, Infosys to name a few in the campus recruitment programmes.

FACULTY:

Dr. K. Ram Mohan Rao, Associate Professor is Head of the Department. The Department has 24 qualified and experienced faculty. The faculty have teaching expertise in C and Data Structures, Java, Web Technologies, Networking, Soft Engineering, Artificial Intelligence, Software Testing, Compiler Construction, Data and Mobile Communication, Cloud Computing, Data Mining, Microprocessors, VLSI Design, Embedded Systems and Signal Processing.

INFRASTRUCTURE:

The IT Department is spread in an area of 1,072 Sq. mtrs to cater to the needs of class rooms, laboratories and other common facilities. The department has 3 laboratories consisting of 144 computer systems equipped with C, C++, Java, Oracle9i with D2K, Rational Suite software and MSDN subscription through academic alliance with Microsoft. These computers are networked through central servers with access to internet and various design tools.

With the balanced mix of Electronics, Computer related subjects and communication, the IT curriculum provides an opportunity for the students to have hands-on experience on specific tools, Vx Works, Rational Rose and Microprocessors and Microcontroller kits (8085, 8086 & 8051). This is in addition to programming labs like C/C++, DBMS, Data Structures, OOSD, JAVA, Operating Systems, Web Technologies, Compiler Construction, Network

Programming, Network Simulation using NS2, Middle Ware Technologies. Also, Cisco Lab is included in the curriculum for the students to improve their Networking knowledge.

The department has an exclusive well-stacked library. Apart from having a large number of books encompassing the entire spectrum of information technology, the library subscribes to several journals and periodicals pertaining to the discipline. The department has forged useful alliances with reputed IT-oriented organizations to facilitate student training, projects, internship and in arranging expert lectures.

DEPARTMENT OF MECHANICAL ENGINEERING

Established in the year 1981, the department offers 4-year B.E program in Mechanical Engineering, with an annual intake of 120 students and a 2-year M.E. Program in Advanced Design & Manufacturing.

MISSION

To nurture an environment of research, innovation and knowledge through the latest teaching-learning practices in mechanical engineering.

FACULTY

Dr. G.V. Ramana Murty is Professor and Head of the Department. The Department has 28 **faculty** members. The Department is one of the well-established Mechanical Engineering Departments in the State. Majority of staff have industrial experience. The Department has made a significant progress in research at the Master's and Doctoral levels. The faculty members of the Department are actively engaged in research publication and dissemination of knowledge through guest lectures at various prestigious institutions.

INFRASTRUCTURE

The Mechanical Engineering Department is spread in an area of 3,465 Sq. meters to cater to the needs of classrooms, laboratories and other common facilities. The department has excellent infrastructural resources. The laboratories in the department are Applied Thermodynamics, Thermal Engineering, CAD/CAM, DOM, Metallurgy Lab, FMS, CNC, Automation & Robotics, Welding, Metal Forming Technology, Metal Cutting & Machine Tools engineering, Metal Casting and Metrology & Instrumentation.

A Central Workshop with the facilities of Carpentry, House Wiring, Fitting, Plumbing, welding and Smithy imparts necessary skills to the students.

The CAD/CAM Lab is equipped with advanced CAD and CAE software, viz., Unigraphics, ANSYS, Hyperworks, FLUENT, GIBBS-CAM, MATLAB for different tasks of part Modeling & Assembly, Analysis, and Simulation etc. Sophisticated equipment like Fast Fourier Transforming Analyzer (FFT), Vibrations, Sound level meters are also available.

The department has established linkages with various renowned organizations for student interactions, training, internship, faculty visits and consultancy services. Some of the organizations are Mahindra & Mahindra, Castrol India, Rane Engine Valves, DRDL, Bharat Heavy Electricals Limited (BHEL), Designtech Systems, APSRTC, Central Institute of Tool Design and Midhani.

The students of the Department have consistently bagged Gold Medals and University Ranks among the affiliated colleges and won several prizes in design and other contests at various levels. The Department has excellent track record in placements and higher education.

DEPARTMENT OF MATHEMATICS

FACULTY

The Department of Mathematics was established in year 1981. Dr.T.Sudhakar Rao is the Head of the Department. The Department has 7 faculty members and caters the teaching needs of the students in Mathematics. Three of them are doctorates. The department is actively engaged in the promotions of mathematical applications through ***MATHS CLUB***.

MISSION

To impart in-depth knowledge of mathematics and its applications in various fields of engineering so as to enable the students to meet the challenges of the Engineering Problems with courage, confidence, conviction and competence.

DEPARTMENT OF PHYSICS

Department of Physics was established in 1981.

MISSION

To imbibe the spirit of scientific temper and to instill logic and analytical approaching budding engineers.

FACULTY

Dr. A.S. Sai Prasad is professor and Head of the Department. All the 5 faculty members are well qualified and experienced. The specializations of the faculty members include electron paramagnetic resonance, materials science, condensed matter physics, luminescence, magnetic fluids, atmospheric sciences etc. The members are actively involved in research work. So far, two sponsored research project funded by the Atomic Energy Research Board and UGC-MRP were completed. The faculty members are actively engaged in research work. More than 40 research papers were published by the faculty in International and national journals of high repute.

INFRASTRUCTURE

The Department is spread in an area of 275 Sq. Mtrs to cater to the needs of classrooms, laboratories and other common facilities. It has two laboratories namely Mechanics lab and Optics lab having equipment. The instruments include CROs, Optical fibers, lasers, Hall apparatus etc. The Research lab was equipped with microcontroller electric muffle furnace, digital balance and a Ball mill to synthesis samples.

DEPARTMENT OF CHEMISTRY

The department was established in 1981.

FACULTY

Dr. Ch. Gouri Shankar is the Head of the Department. The department has 7 experienced members of faculty. Three of them are doctorates. One UGC-MRP research project is in progress.

INFRASTRUCTURE

The Department of Chemistry has a comprehensive Chemistry Laboratory in an area of 398 Sq. meters with latest equipment such as spectrophotometer etc.

MISSION

To infuse knowledge of chemical principles of engineering materials to the prospective engineers

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

The Department, at present, offers courses in English and Economics. It has carved a unique niche by offering various value-added courses.

FACULTY

Dr. (Ms). Jacqueline Amaral is the Head of the Department. The department has 8 faculty members with a strong foundation in communication skills and phonetics.

INFRASTRUCTURE

The Department of English has comprehensive laboratories in an area of 173 Sq. meters. It provides training in communication and interpersonal skills, accent neutralization, soft skills and presentation skills to mention a few. The Department also provides consulting and training services to industry. The Phonetics & Interactive communication skills laboratories help students develop English skills, enriching their interpersonal skills, enhancing their confidence levels and

MISSION

To nurture the budding professionals to face dynamic situations of the business world through training, mentoring, and counseling by creating a 'learning rich' environment."

marginalizing their first language influence. The English Language Lab is upgraded to Multi media Lab with 34 computer systems containing Hi-Class platform from Hi Class Software, Sky pronunciation suite and Connected Speech, presentation skills from Young India. The total cost of major equipment/instruments in the Department is about Rs.31.00 lakhs.

DEPARTMENT OF PHYSICAL EDUCATION

Department of Physical Education plays a crucial role in encouraging the students to nurture the inherent talents in sports and games. Qualified and experienced faculty serves the needs of the students. The college has good indoor and outdoor sports & games facilities like table tennis, carom, chess, shuttle badminton, cricket, valley ball, basketball, etc. The college student teams have been consistently winning various prizes/medals at Inter-Collegiate, Inter-University and also at various National Level Tournaments.

DEPARTMENT OF HUMAN RESOURCES

Human Resources (HR) department provides career guidance and counseling to the outgoing budding engineers. It prepares students to meet the industry's requirements technically and enrich them to suit the corporate world with excellent soft skills. The department of HR organizes personality development

programs and looks after campus placements of the students. It takes care of pre-placement training & placements. It explores the various career options in the fields of All India Civil Services, All India Engineering Services, Scientific, Research and Industrial Organizations, Army, Navy and Air force in addition to arranging counseling sessions on higher education avenues in India and abroad. Human Resources wing is headed by Prof. Kishore, Director, Training & Placement. Sri. K. Srinivasa Chakravarthy is Assistant Director.

ADMISSIONS AND EXAMINATIONS BRANCH

Admissions and Examinations Branch takes care of all the academic requirements of students starting from admissions processes, collection of original certificates at the time of admission, issue of I.D cards, syllabus books, photo copies of original certificates deposited in the college, course completion certificates, custodian forms, and return original certificates at the time of leaving and also issue Transfer and Bona-fide certificates, Migration certificate, Provisional Degree certificate, Consolidate marks memos, etc.

DIRECTOR – STUDENT WELFARE

Sri K. Ramakrishna is the Assistant DSW. This wing of the college looks after the student facilities and addresses the issues and problems of students. The DSW takes care of amenities, proctorial system, transport facilities, financial Assistance, student bus passes, railway concessions, certification of scholarship applications and Student Bonafide certificates.

ACCOUNTS SECTION

The major works of account section are collection of tuition fee, special fee, examination fee, medical condonation fee, process and disbursement of A.P. State Social welfare Scholarships, National Merit Scholarships, AICTE stipends, estimates to obtain Education Loan from Banks, Refund of caution deposits and issue of no due certificates.

STUDENT COUNSELLOR

The student counsellor services are provided to the students to give guidance on personal, social and psychological problems.

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
ALMANAC FOR THE ACADEMIC YEAR 2017-18

B.E –I SEMESTER

Particulars	Date
Conduct of Orientation, foundation and Bridge Classes	31-07-2017 to 05-08-2017
Commencement of Instruction	07-08-2017
I Class Test	19-09-2017 to 23-09-2017
Dassehra Vacation	24-09-2017 to 02-10-2017
II Class Test	28-11-2017 to 02-12-2017
Last date of instruction	02-12-2017
Preparation holidays and practical Examinations	04-12-2017 to 16-12-2017
Commencement of Theory Examinations	18-12-2017 to 06-01-2018

B.E –II SEMESTER

Particulars	Date
Commencement of Instruction	15-01-2018
I Class Test	05-03-2018 to 09-03-2018
II Class Test	02-05-2018 to 05-05-2018
Last date of instruction	05-05-2018
Preparation holidays and practical Examinations	07-05-2018 to 19-05-2018
Commencement of Theory Examinations	21-05-2018 to 16-06-2018
Summer vacation	07-05-2018 to 07-07-2018
Commencement of B.E 2/4-I Semester for the Academic year 2018-2019	16-07-2018

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
SCHEME OF INSTRUCTION AND EXAMINATIONS FOR B.E I SEMESTER W.E. F 2017-18

Course Code	I SEMESTER					Scheme of Instruction Hours per week				Scheme of Examination		Credits	
	Name of the Course					L	T	D	P	Duration in Hrs	Max. Marks		
											SEE		CIE
THEORY													
HS110EH	English - I					2	1	-	-	3	60	40	2
BS110MA	Engineering Mathematics - I					3	1	-	-	3	60	40	3
BS120PH	Engineering Physics					2	1	-	-	3	60	40	2
BS130CH	Engineering Chemistry					2	1	-	-	3	60	40	2
ES110CS	Computer Programming					3	1	-	-	3	60	40	3
ES120EE	Basic Electrical Engineering (CSE, ECE, IT)					3	0	-	-	3	60	40	3
ES100CE	Basic Engineering Mechanics (CIVIL, MECH, EEE)												
ES120CE	Engineering Graphics – I (Civil, Mech, EEE)					-	2	3	-	3	60	40	4
ES130CE	Engineering Drawing-I (CSE, IT, ECE)												
LABS													
HS111EH	English Language Lab - I					-	-	-	2	3	50	30	1
BS111PH	Engineering Physics Lab (CIVIL. ECE, IT)								2	3	50	30	1
BS121CH	Engineering Chemistry Lab (CSE, EEE, MECH)												
ES111CS	Computer Programming Lab					-	-	-	2	3	50	30	1
ES121ME	Engineering Workshop- I					-	-	-	2	3	50	30	1
	Total					15	7	3	8		620	400	23
*SEE- Semester End Examination *CIE-Continuous Internal Evaluation						33					1020		

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

SYLLABUS FOR B.E – I SEMESTER ENGLISH-I (Common to all branches)

Instruction: 2+1Hrs /week	SEE Marks :60	Course Code : HS110EH
Credits : 2	CIE Marks: 40	Duration of SEE : 3 Hrs

Course Objectives	Course Outcomes
<p><i>The course will enable the students to:</i></p> <ul style="list-style-type: none">• understand the role and importance of communications skills• realise the various features and functions of human language and communication, verbal and non- verbal.• comprehend the use of words in different contexts.• Write notes and letters both official and personal• develop the habit of listening effectively to various speakers and lectures• develop reading strategies in order to understand various types of texts	<p><i>At the end of the course the student should be able to:</i></p> <ol style="list-style-type: none">1. greet and converse with friends, teachers, strangers appropriately2. listen and respond to lectures, talks and take and make notes3. use language functionally and participate in classroom interactions and in simulated situations.4. read, comprehend, and answer different types of texts.5. write formal and informal correspondence with minimum errors

UNIT-I

Effective communication; Role and Importance of Communication; Features and functions of language and communication; Process of Communication; Types of communication - verbal and non verbal; Channels of communication; Barriers to effective communication.

UNIT-II

Importance of listening in effective communication; Improving listening ability through activities; note-taking, Speaking strategies; Situational dialogues (Basic level)

UNIT-III

Reading different texts; sub-skills of reading; Understanding function, organization and meaning of various texts to develop reading skills; Written Communication: features of writing; Cohesion and Coherence; Descriptive/ Expository writing - describing events, people, places, objects.

UNIT-IV

Remedial English: Parts of speech; Articles, prepositions; Tense and Aspect; Connectives and Correlative conjuncts; Common errors, Direct and Indirect Speech, Punctuation, Word- Formation, Homonyms, Homophones, Synonyms, Antonyms.

UNIT-V

Reading Texts .

The Road Not Taken - Robert Frost- **Poem**

The Eyes Are Not Here - Ruskin Bond- **Short-story**

Suggested textbooks:

1. Meenakshi Raman and Sangeeta Sharma Technical communication - 2nd Edition Principles and Practice Oxford University Press,2014

Reference Books:

2. E.Suresh kumar, P. Sreehari and J. Savithri - Essential English
3. Reading comprehension - Nuttal.J.C - Orient Blackswan
4. Sunitha Mishra,C. Murali Krishna, Communication Skills for Engineers, Pearson, 2004.
5. M. Ashraf Rizvi. Effective Technical Communication. Tata Mcgraw Hill, 2005.
6. Allen and Waters., How English Works.
7. Willis Jane., English through English.

**SYLLABUS FOR B.E I- SEMESTER
ENGLISH LANGUAGE LAB-I**

(Common to all branches)

Instruction: 2Hrs /week	SEE Marks :50	Course Code : HS111EH
Credits :1	CIE Marks: 30	Duration of SEE : 3 Hrs

Course Objectives	Course Outcomes
<p><i>The course will enable the learners to:</i></p> <ul style="list-style-type: none">• identify and describe phonemes in English.• learn the different sounds in the English language so as to develop good linguistic competence.• learn to distinguish between the vowel and consonant sounds individually and also when they occur in words.• improve their pronunciation by learning stress, rhythm and intonation.• reduce mother tongue influence when speaking English.• use language effectively in debates, interviews, group discussions and meetings.• develop reading skills and analyse various text types.• use dictionary and thesaurus effectively.	<p><i>At the end of the course the learners should be able to:</i></p> <ul style="list-style-type: none">• use appropriate language suited to the occasion.• modify language use as per the needs of peers.• take notes in a classroom lecture.• make notes for future use.• use language coherently using simple language.

PHONETICS LAB- TOPICS

Introduction to English Phonetics: Introductory to auditory, acoustic and articulatory phonetics. Organs of speech: the respiratory, articulatory and phonatory systems

Sound System of English: Phonetic sounds, Introduction to International Phonetic Alphabet, Classification and Description of English Phonemic sounds; Minimal pairs: The Syllable: Types of syllables; Consonant clusters.

INTERACTIVE COMMUNICATION SKILLS LAB-TOPICS

Role Play: - Use of structured and semi-structured dialogues in a variety of situations and settings.

Public Speaking: Participate in public speaking, essentials of an effective speech, rehearsal techniques, planning and delivering a speech.

Debate: understanding the difference between a debate and a group discussion, essentials of debate, concluding a debate. (Basic Level)

Group discussion: Objectives of GD, Types of GDs; Initiating, Continuing, and concluding a GD. (Basic Level)

STUDY SKILLS AND READING SKILLS LAB – TOPICS

Use of Dictionary and Thesaurus: Advantages of using a Dictionary and Thesaurus; Effective use of Dictionary and Thesaurus.

Book reviews and Film reviews - Oral and Written

Vocabulary: - Registers.

Reading: - Reading different types of texts , note-making
Reading Newspapers, Magazines, Short–Stories, One-act plays

Suggested textbook:

1. Jayshree Mohanraj, Kandula Nirupa Rani and Indira Babbellapati, Speak Well, Orient BlackSwan

Reference Books:

2. T. Balasubramanian: A textbook of English phonetics for Indian students, Macmillan, 2008.
3. Priyadarshi Patnaik : Group discussion and interviews, Cambridge University Press India private limited 2011.
4. Daniel Jones: Cambridge English Pronouncing Dictionary - A Definitive guide to contemporary English Pronunciation.
5. Reading Cards (Eng400): Orient Blackswan. Reading Squabble - Hadfield.

Note: Students will be tested on activities pertaining to all the labs through the written form, spoken form, computer based and viva, both for CIE and SEE.

SYLLABUS FOR B.E I-SEMESTER ENGINEERING MATHEMATICS-I

(Common to all branches)

Instruction: 3+1Hrs /week	SEE Marks :60	Course Code : BS110MA
Credits : 3	CIE Marks: 40	Duration of SEE : 3 Hrs

Course Objectives	Course Outcomes
<i>The course will enable the students to:</i>	<i>At the end of the course students should be able to:</i>
<ol style="list-style-type: none"> 1. Understand the concepts of curvature, radius of curvature evolutes and envelopes and to expand functions using Taylor's series. 2. Acquire knowledge of partial derivatives, and expand functions using Taylor's series functions of two real variables and, maxima-minima. 3. Learn how to evaluate double and triple integrals, Change of order of integration and change of variables. 4. To study the concepts of vector differentiation, vector integration and its applications. 5. Understand infinite series, nature and various tests to check the nature of infinite series. 	<ol style="list-style-type: none"> a) Compute radius of curvature, evolute and envelope of a given curve and also to expand given function using Taylor's series. b) Expand a given function in terms of Taylor's series and find Maxima and minima of functions of several variables also using Lagrange's method of multipliers c) Evaluate given double and triple integrals. d) Calculate the gradient and directional derivatives and to use Green's theorem to evaluate line integrals, Stokes' theorem to give a physical interpretation of the curl of a vector field and the divergence theorem. e) Identify the given series and apply an appropriate test to check its nature

UNIT – I (12 classes): Differential Calculus

Introduction to Mean Value Theorems with Geometrical Interpretation (Without Proofs) - Taylor's Series – Expansion of functions on power series- Curvature- Radius of Curvature (Cartesian, Polar and Parametric coordinates) – Center of Curvature –Evolutes - Envelopes.

UNIT – II (14 classes): Functions of Several Real Variables

Partial Derivatives - Higher Order Partial Derivatives - Total Derivates - Derivatives of Composite and implicit functions - Taylor's series of functions of two variables - Applications of Taylor's series to linear and quadratic approximations - Maxima and Minima of functions of two variables with and

without constraints - Lagrange's Method of multipliers – Jacobian of function of two variables.

UNIT – III (10 classes): Multiple integrals

Double and Triple integrals - Change of order of integration-Change of variables from Cartesian to Polar Co-ordinates- Applications to evaluate area and volume.

UNIT – IV (14 classes): Vector Calculus

Scalar and Vector point functions -Vector Differentiation-Level Surfaces- Gradient of a scalar point function- Normal to a level surface- Angle between the surfaces- Equation of Tangent plane- Directional Derivative – Divergence and Curl of a Vector Field-Conservative vector field- Vector Identities (without Proofs) – Line, Surface and Volume integrals- Green's Theorem – Gauss Divergence theorem - Stokes's Theorem. (all theorems without proof).

UNIT – V (8 classes): Infinite Series

Sequences- Series – Convergence and Divergence- Series of positive terms- Geometric series- p-series test - Comparison tests - D'Alemberts Ratio Test – Raabe's Test – Cauchy's root test - Alternating Series – Leibnitz test – Absolute and Conditional convergence.

Suggested Books:

1. R. K. Jain and S. R. K. Iyengar, Advanced Engineering Mathematics, 3rd Ed, Narosa Publishing House.
2. B. S. Grewal, Higher Engineering Mathematics, 40th. Ed, Khanna Publishers.

Reference Books:

1. Erwin Kreyszig, Advanced Engineering Mathematics, 8th Ed, John Wiley & Sons.
2. Shanti Narayan, Differential Calculus, S. Chand & Co
3. Schaum's outline series, Vector Calculus

**SYLLABUS FOR B.E I-SEMESTER
ENGINEERING PHYSICS
(Common to all branches)**

Instruction: 2+1Hrs /week	SEE Marks :60	Course Code : BS120PH
Credits : 2	CIE Marks: 40	Duration of SEE : 3 Hrs

<i>Course objectives</i>	<i>Course outcomes</i>
<p><i>The course will enable the students to:</i></p> <ul style="list-style-type: none"> • Mathematical formulations for mechanical systems like oscillators. • Fundamental principles of optics in engineering fields. • The construction of optical fibres and losses in optical fibres. • Working of various laser systems • Engineering applications of a.c fundamentals and EM theory. 	<p><i>At the end of the course students should be able to:</i></p> <ul style="list-style-type: none"> • Deduce solutions under different conditions of mechanical oscillators. • Appreciate the principles of interference, diffraction, polarization in engineering and technology. • Summarise various merits, demerits and applications of optical fibres. • Ascertain appropriate laser systems for practical usage. • Apply electrical and electromagnetic principles in various applications.

UNIT-I: FUNDAMENTALS OF VIBRATIONS: (8 HOURS)

- Free, Damped and Forced Harmonic Oscillators: Equation of motion, their solutions and special case such as under damping, over damping and critical damping.
- Logarithmic decrement, Relaxation time, amplitude and velocity resonance, sharpness, bandwidth, Q-factor.
- Superposition of simple harmonic vibrations of same frequency, Lissajous figures.

UNIT-II: PHYSICAL OPTICS (10Hours)

- Interference in thin films, Newton's rings (reflected light), measurement of wavelength of a light source using Newton's rings, anti-reflecting coatings.
- Diffraction due to a single slit, double slit and diffraction grating (Qualitative), dispersive and resolving powers of diffraction grating.
- Polarization of light, double Refraction, Nicol's prism, wave plates, optical activity, Laurent's half shade polarimeter, determination specific rotation.

UNIT – III: INTRODUCTION TO FIBRE OPTICS (7 Hours)

- Fibre construction, Propagation of light through an optical fiber, Acceptance angle, Numerical aperture, Types of optical fibers: Step index, GRIN fibers, SMF and MMF fibers.

- Losses in optical fiber: absorption losses, *evanescent field*, bending losses, signal distortion. Merits and demerits of optical fiber, applications of optical fiber.

UNIT-IV–LASERS (08 Hours)

- Characteristics of Lasers, induced absorption, spontaneous and stimulated emission of radiation - Einstein Coefficients A and B, meta stable state, pumping, Population inversion.
- Solid state lasers: Ruby laser, Nd-YAG laser. Gas Laser: Helium-Neon Laser, Applications of lasers in engineering (industrial, medical and communication), LIDAR, Holography (Basic principles, advantages and applications).

UNIT– V: AC CIRCUITS AND EM THEORY (9 Hours)

- **AC CIRCUITS:** Basic Definitions of RMS and average values of A.C voltage, reactance and impedance, power factor, A.C through pure resistor, capacitor and inductor, AC through RC, RL and CL circuits with phasor diagrams, Series and parallel LCR resonance circuits, band width, sharpness, electromechanical analogy.
- **ELECTROMAGNETIC THEORY:** Conduction and displacement current, Maxwell's equations in integral and differential forms, electromagnetic wave equations in free space and conducting medium, transverse nature of EM waves and Poynting vector, skin depth.

Suggested books:

1. Avadhanulu M. N. and. Kshirsagar P. G, Textbook of Engineering Physics, 5th Edition (2014), S. Chand & Co. Pvt. Ltd, New Delhi
2. David Halliday, Robert Resnick and Walker, Principles of Physics Extended, 10th Ed (2014) Wiley Eastern limited, Jefferson City, USA.

Reference Books:

3. Jewett Serway, Physics for scientists and engineers, 8th edition (2009), Cengage learning Publication, Boston, USA.
4. John M Senior, Optical Fiber Communication: Principles and Practice, 3rd Ed (2009), Pearson Education Limited, London
5. Neeraj Mehta, Applied Physics for Engineers, (2011), Prentice-Hall of India Pvt.Ltd, New Delhi
6. Gupta S.L and Sanjeev Gupta, Modern Engineering Physics, 1st Ed (2011), Dhanpat Rai publications, New Delhi
7. Sanjay D Jain and Girish H Sahasrabudhe, Engineering Physics (2012) University Press, Hyderabad

Online Resources:

8. www.nptel.ac.in
9. <http://ocw.mit.edu/courses/physics>
10. <http://oyc.yale.edu/physics>

SYLLABUS FOR B.E
ENGINEERING PHYSICS LABORATORY
(Common to all branches)

Instruction: 2Hrs /week	SEE Marks :50	Course Code : BS111PH
Credits : 1	CIE Marks: 30	Duration of SEE : 3 Hrs

Course Objectives	Course Outcomes
<p><i>Students are able to</i></p> <ol style="list-style-type: none"> 1. Make precise measurements using basic physical principles and acquire skills to handle the instruments 2. Relates the theoretical Knowledge to the behavior of Practical Physical world. 3. Analyze errors in the experimental data. 4. Plot graphs between various physical parameters. 	<p><i>The students acquire the ability to</i></p> <ol style="list-style-type: none"> 1. Conduct experiments, take measurements independently. 2. Write appropriate laboratory reports. 3. Compute and compare the experimental results and draw relevant conclusions. 4. Use the graphical representation of data and estimate results from graphs.

LIST OF EXPERIMENTS

1. Estimation of errors using Gaussian distribution in Torsional Pendulum and to calculate the probable error and rigidity modulus.
2. Plot of B-H curve of a ferromagnetic specimen and to find Coercivity (H_c), Remanence (B_r) and Hysteresis loss
3. Determination of moment of inertia 'I' of a flywheel about its axis of rotation.
4. Determination of radius of curvature of a given Plano-convex lens by forming Newton's Rings.
5. Determination of wavelength of spectral lines of Mercury light source using diffraction grating under normal incidence.
6. Determination of wavelength of given semiconductor laser using diffraction.
7. Calculation of numerical aperture, acceptance angle and power loss due to bending of an optical fiber & to study power loss.
8. Study of V-I characteristics of P-N Junction and Zener diode
9. Study of resonance in LCR series & parallel circuits and to find resonant frequency & Q-factor.

10. Determine the specific rotatory power of sugar solutions of different concentration by Lorent half shade polarimeter.
11. Study of V-I characteristics of solar cell & to calculate fill factor, efficiency & series resistance.
12. Determination of energy gap of a given semiconductor.

Optional Experiments:

1. Verification of Malus law
2. Calculation of Seebeck Coefficient by thermoelectric power.
3. Study of Thermistor characteristics
4. Cathode Ray Oscilloscope: Measurement of frequency, amplitude and phase

**** Students should perform a minimum of 10 experiments***

Suggested Books:

1. Worshnop B.L. and Flint H.T. Advanced Practical Physics, KPH
2. Gupta S. L and Kumar. V Practical Physics, Pragati Prakashan
3. Chauhan & Singh, Advanced Practical Physics Vol.I & II, Pragati Prakashan.

**SYLLABUS FOR B.E I-SEMESTER
ENGINEERING CHEMISTRY
(Common to all branches)**

Instruction: 2+1Hrs /week	SEE Marks :60	Course Code : BS130CH
Credits : 2	CIE Marks: 40	Duration of SEE : 3 Hrs

OBJECTIVES	OUTCOMES
The course will enable the students to:	At the end of the course students should be able to:
<ol style="list-style-type: none">1. Study types of conductance, variation of electrode potential and electromotive force and to acquaint with applications of Galvanic Cell.2. Describe the requirements of water for domestic and industrial uses.3. Study the phase behaviour and composition of heterogeneous equilibrium systems.4. Study various types of nano materials, their preparation methods and applications.5. Get acquainted with engineering materials like membranes and refractories.	<ol style="list-style-type: none">1. Apply concepts of electrode potentials and Nernst equation to calculate electromotive force of a given cell.2. Explain the principles and applications of conductometric and potentiometric titrations and determination of pH of a solution using Glass and Quinhydrone electrodes.3. Determine hardness and alkalinity of a given water sample and suggest suitable methods for removal of hardness of the given water sample.4. Apply Phase rule to explain phase diagrams of one component and two component systems.5. Explain properties, synthetic methods, and applications of nanomaterials in general and carbon nanotubes in particular.6. Discuss the principle, casting methods, and applications of membranes with special reference to poly phenylene oxide and poly ether sulphone.7. Apply the knowledge of properties of refractory materials and suggest a suitable refractory material for a given industrial application.

UNIT-I: Electro Chemistry

Introduction, types of conductors-electronic and electrolytic, description of conductivity cell, principle and applications of conductometric titrations-electrolytic and galvanic cells. IUPAC convention of cell notation, cell reaction, concept of electrode potential, electro motive force (emf), electro chemical series – applications, Nernst equation-derivation and Numericals. Types of electrodes- Calomel electrode (CE), Quinhydrone and Glass electrode (GE). Determination of p^H using quinhydrone and glass electrodes. Principle and applications of potentiometric titrations.

UNIT-II: Water Technology

Hardness of water- types and its units, Degree of hardness-Numericals on calculation of hardness of water. Determination of hardness of water by complexometric titration method - Numericals. Alkalinity of water and its determination-Numericals. Effect of hard water in boilers- scales, sludges, causes and their prevention by calgon & blow down processes. Softening of water by de mineralization. Specifications of potable water (WHO & BIS). Water treatment for drinking purpose- Chlorination- Break Point Chlorination and Reverse Osmosis.

UNIT-III: Phase rule

Phase rule- explanation of terms involved, One component system: Water system, Condensed phase rule, Two component systems: Lead- Silver (Pb-Ag) system, Pattinson's process, Copper -Nickel (Cu-Ni) system, Lead – Tin system (Pb-Sn), Eutectics and their applications in safety fuses and solders.

UNIT-IV: Nano Materials

Introduction - concept of Nanomaterials, electrical, optical, magnetic, and mechanical properties.

Types of Nanomaterials: Carbon nano tubes, quantum dots, nanowires, nano crystals.

Synthesis of nano materials: Top down and bottom up approaches- Mechanical grinding by ball milling, Sol gel method and Chemical vapor deposition methods.

Carbon Nanotubes: Single walled carbon nanotubes (SWCNTs), structure of SWCNTs - arm chair, chiral and zig zag. Multi walled carbon nanotubes (MWCNTs), synthesis of CNTs- arc discharge and laser ablation methods, applications.

UNIT-V: Membrane technology and Refractories

Membrane technology

Introduction, Classification, working principle of membrane, casting methods: Phase Inversion and Solvent Evaporation methods, Synthesis of poly phenylene oxide, poly ether sulphone and membrane casting. Industrial applications of membranes.

Refractories:

Introduction, requirements of a good refractory, classification, properties: Refractoriness-determination and significance, Refractoriness under load (RUL)-determination and significance, Thermal spalling and Porosity-Applications of refractories.

Suggested Books:

1. P.C.Jain and Monica Jain, "Engineering Chemistry", Dhanpat Rai Pub, Co., New Delhi (2002)
2. Shashi Chawla, "Text Book of Engineering Chemistry", Dhanpat Rai Publishing Company, NewDelhi (2008).
3. S.S. Dara "A text book of engineering chemistry" S.Chand&Co.Ltd., New Delhi (2006).
4. Puri B. R., Sharma L. R. and Pathania M. S., "Principles of Physical Chemistry", Vishal Publishing Company, Delhi, 2010.
5. Palanna O. G., "Engineering Chemistry", Tata Mc.Graw Hill Education Pvt. Ltd., New Delhi, 2009.
6. Mary Jane Shultz, "Engineering Chemistry", Cengage Learning, USA, 2009

Reference Books:

1. B.K.Sharma, "Engineering chemistry" Krishna Prakasan Media (P) Ltd., Meerut (2001)
2. Water Treatment : F. I. Bilane, Mir publisher
3. Chemistry of Advanced Materials: CNR Rao, RSC Publication.
4. Materials Science and Engineering an Introduction, William D. Callister, Jr. Wiley publisher.
5. Introduction to nano materials by T.Pradeep.
6. Derek Pletcher and Frank C. Walsh, "Industrial Electrochemistry", Chapman and Hall, New York,1993
7. Vijayamohanan K. Pillai and MeeraParthasarathy. "Functional Materials - A Chemist's Perspective" Universities
a. Press, India, 2012.
8. Nanostructures and Nanomaterials: Synthesis, Properties and applications, Cao G, ICP, London,2004

Online resources:

1. www.nptel.ac.in
2. <http://ndl.iitkgp.ac.in>
3. <http://ocw.mit.edu>

SYLLABUS FOR B.E ENGINEERING CHEMISTRY LAB

(Common to all branches)

Instruction: 2Hrs /week	SEE Marks :50	Course Code : BS121CH
Credits :1	CIE Marks: 30	Duration of SEE : 3 Hrs

OBJECTIVES	OUTCOMES
The course will enable the students to:	At the end of the course students should be able to:
<ol style="list-style-type: none"> 1. Describe the quantitative analytical techniques 2. Learn the skills to handle the instruments 3. Apply the theoretical principles in experiments 4. Demonstrate the preparation of polymers 5. Examine the accuracy 	<ol style="list-style-type: none"> 1. Analyze the given substance using conventional and instrumental methods of chemical analysis 2. Estimate the amount of a given substance in the given sample by Conductometry, Potentiometry, P^H Metry and Colorimetry 3. Evaluate the data recorded from the practical observations 4. Prepare a polymer 5. Calculate the percentage of error of the results obtained

Any 10 experiments to be performed

1. Introduction to Volumetric / Instrumentation analysis and safety precautions. Standardization of $KMnO_4$ / NaOH
2. Estimation of Ferrous iron in given sample by $KMnO_4$
3. Estimation of hardness of Water by Complexometric method
4. Estimation of Calcium in Milk by Complexometric method
5. Estimation of Carbonate and bicarbonate alkalinity of Water
6. Estimation of Copper in brass / in the given solution by hypo
7. Measurement of Conductivity and determination of concentration of given electrolyte by **Conductometry**.
8. Measurement of Conductivity and determination of concentration of electrolytes in given mixture by **Conductometry**.
9. Construction of a galvanic cell / battery and study of variation of EMF / Cell Voltage with change in concentration of electrolyte by **Potentiometry**
10. Construction of galvanic cell with the given electrodes and estimation of Ferrous iron in the test sample by **Potentiometry**.
11. Estimation of acid in the test sample using **P^H Metry**
12. Estimation of copper in the test sample using **Colorimetry**.

Demo

1. Preparation of a polymer
2. Preparation of Nano material

Learning Resource:

1. B.Vishwanathan, P.S Raghavan *Practical Physical Chemistry*, Viva Books Private Limited.
2. J. Mendham and Thomas, "*Vogel's Text book of quantitative chemical analysis*", Person education Pvt. Ltd, 6th Edition (2002).

Online resources:

1. www.nptel.ac.in
2. <http://ndl.iitkgp.ac.in>
3. <http://ocw.mit.edu>

**SYLLABI FOR B.E I-SEMESTER
COMPUTER PROGRAMMING
(Common to all Branches)**

Instruction: 3+1Hrs /week	SEE Marks :60	Course Code : ES110CS
Credits : 3	CIE Marks: 40	Duration of SEE : 3 Hrs

Course Objectives	Course Outcomes
Students should be able to	At the end of the course, students will be able to
<ul style="list-style-type: none">• Acquire problem solving skills• Develop flow charts• Understand structured programming concepts• Write programs in C Language	<ul style="list-style-type: none">• Develop flowcharts and algorithms for solving a problem and choose appropriate data type for writing programs in C language• Design modular programs involving input output operations, decision making and looping constructs• Apply the concept of arrays for storing, sorting and searching data• Apply the concept of pointers for dynamic memory management and string handling• Design programs to store data in structures and files

UNIT-I

Introduction to Computers: Computer Systems, Computing Environments, Computer Languages, Creating and Running Programs, Software Development, Flowcharts.

Number Systems (Binary, Octal, Decimal and Hexadecimal), Representation of Numbers (Fixed and Floating Point).

Introduction to C Language- Background, C Programs, Identifiers, Types, Variables, Constants, Input/Output, Expressions, Precedence and Associativity, Side Effects, Evaluating Expressions, Type Conversion, Statements, Bitwise Operators.

UNIT-II

Selection: Logical Data and Operators, if... else, switch Statements, Standard Functions.

Repetition: Loops, while, for, do-while Statements, Loop Examples, break, continue, goto.

Functions: Designing Structured Programs, Functions Basics, User Defined Functions, Inter-Function Communication, Standard Functions, Scope, Storage Classes-Auto, Register, Static, Extern, Scope Rules and Type Qualifiers.

UNIT-III

Recursion-Recursive Functions, Preprocessor Commands.

Arrays: Concepts, Using Arrays in C, Inter-Function Communication, Array Applications,

Two-Dimensional Arrays, Multidimensional Arrays, Linear Search and Binary Search, Selection Sort and Bubble Sort.

UNIT-IV

Pointers: Introduction, Pointers for Inter-Function Communication, Pointers to Pointers, Compatibility, LValue and RValue, Arrays and Pointers, Pointer Arithmetic and Arrays, Passing on Array to a Function, Memory Allocation Functions, Array of Pointers, Programming Applications, Pointers to void, Pointers to Functions, Command Line Arguments.

Strings – Concepts, C Strings, String Input/Output, Functions, Arrays of Strings, String Manipulation Functions.

UNIT-V

Type Definition (typedef), Enumerated Types.

Structure: Definition and Initialization of Structures, Accessing Structures, Nested Structures, Arrays of Structures, Structures and Functions, Pointers to Structures, Self Referential Structures, Unions.

Input and Output: Files, Streams, Standard Library Input/Output Functions, Character Input/Output Functions.

Suggested Books:

1. Forouzan B.A & Richard F. Gilberg, A Structured Programming Approach using C, 3rd Edition (2013), Cengage Learning.

Reference Books:

1. Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, 2nd Edition (2006), Prentice-Hall.
2. Rajaraman V, The Fundamentals of Computer, 4th Edition (2006), Prentice-Hall of India
3. Steve Oualline, Practical C Programming, 3rd Edition (2006), O'Reilly Press.
4. Jeri R. Hanly, Elliot B. Koffman, Problem Solving and Program Design in C, 5th Edition (2007), Pearson Education.
5. Balagurusamy E, Programming in ANSI C, 4th Edition (2008), TMG.

6. Gottfried, Programming with C, 3rd Edition (2010), TMH.
7. R G Dromey, How to Solve it by Computer, 1st Edition (2006), Pearson Education.

Online Resources:

1. <https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-087-practical-programming-in-c-january-iap-2010/lecture-notes/>
2. <http://nptel.ac.in/syllabus/syllabus.php?subjectId=106104128>

w.e.f the academic year 2017-18

**SYLLABI FOR B.E I-SEMESTER
COMPUTER PROGRAMMING LAB
(Common to all Branches)**

Instruction: 2Hrs /week	SEE Marks :50	Course Code : ES111CS
Credits : 1	CIE Marks: 30	Duration of SEE : 3 Hrs

Course Objectives	Course Outcomes
Students should be able to	At the end of the course, students will be able to
<ul style="list-style-type: none"> • Understand the fundamentals of programming in C Language • Write, compile and debug programs in C • Formulate solution to problems and implement in C • Effectively choose programming components to solve computing problems 	<ul style="list-style-type: none"> • Choose appropriate data type for implementing programs in C language • Design and implement modular programs involving input output operations, decision making and looping constructs • Implement search and sort operations on arrays • Apply the concept of pointers for implementing programs on dynamic memory management and string handling • Design and implement programs to store data in structures and files

Programming Exercise:

1. Finding maximum and minimum of given set of numbers, finding roots of quadratic equation.
2. Sin x and Cos x values using series expansion.
3. Conversion of binary to decimal, octal, hexadecimal and vice versa.
4. Generating Pascal triangle, pyramid of numbers.

5. Recursion: factorial, Fibonacci, GCD.
6. Matrix addition and multiplication using arrays, linear search and binary search using recursive and non-recursive procedures.
7. Bubble sort and selection sort.
8. Programs on pointers: pointer to arrays, pointer to functions.
9. Functions for string manipulations.
10. Programs on structures and unions.
11. Finding the number of characters, words and lines of given text file.
12. File handling programs.

Suggested Books:

2. Forouzan B.A & Richard F. Gilberg, A Structured Programming Approach using C, 3rd Edition (2013), Cengage Learning.

Reference Books:

8. Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, 2nd Edition (2006), Prentice-Hall.
9. Steve Oualline, Practical C Programming, 3rd Edition (2006), O'Reilly Press.
10. Balagurusamy E, Programming in ANSI C, 4th Edition (2008), TMG.

Online Resources:

3. <https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-087-practical-programming-in-c-january-iap-2010/lecture-notes/>
4. <http://nptel.ac.in/syllabus/syllabus.php?subjectId=106104128>

**SYLLABI FOR B.E I-SEMESTER
BASIC ELECTRICAL ENGINEERING
(Common for CSE, ECE & IT Branches)**

Instruction: 3Hrs /week	SEE Marks :60	Course Code : ES120EE
Credits : 3	CIE Marks: 40	Duration of SEE : 3 Hrs

Course objective	Course outcomes
The aim of the course is to provide the students with an understanding of basics in electrical engineering, to enable them to analyze various electrical machines and impart the knowledge of power generation	After the successful completion of the course, the student will be able to: 1. Analyze electrical circuits to compute and measure the parameters of electrical energy. 2. Able to identify and test the various electrical machines, and assess the ratings needed in a given application. 3. Acquire the knowledge of power generation through conventional and from renewable energy sources.

UNIT – I

DC Circuits: Network elements, Ohm’s Law, Kirchoff’s Voltage and current Law, Power in DC circuits, Series and parallel circuits.

Network Theorems : Super position Theorem, Thevinin's Theorem, Norton's Theorem, Applications.

UNIT – II

AC Circuits: Sinusoidal sources, Phasor representation of sinusoidal quantities, Average and RMS values, Form factor, Analysis of RLC Circuits to sinusoidal inputs, Power factor, Active & reactive powers, energy stored in inductance and capacitance. Balanced star and delta connections for 3- ϕ voltage.

Magnetic Circuits: Fundamentals and Solution of Magnetic Circuits, Concepts of Self and Mutual Inductances, Coefficient of Coupling.

UNIT – III

DC Generators: Construction and working principle, types of excitation, types of generators, Production of emf in Generator, Applications.

DC Motors: Working principle, types of DC motors, Torque in a DC motor, Characteristic of Series, Shunt and Compound motors, Speed control of DC series and shunt motors, Applications.

UNIT – IV

Single Phase Transformers: Principle of operation, Transformer on No-load and Load, Equivalent circuit, Efficiency & regulation, O.C and S.C tests, Principle of Autotransformer - Applications.

Three Phase Induction Motors: Construction and principle of operation of induction motors, Applications.

Three Phase Alternators: Construction and principle of operation, production of EMF, Applications.

UNIT – V

Power Generation: Basic idea of thermal, hydro, nuclear power generation - layouts, Solar and wind power.

Single Phase Motors: Basic theory, Capacitor Start and Capacitor Run motor, principal of operation of Stepper motor, Applications.

Suggested Reading:

1. Edward Hughes, Electrical Technology, 10th Edition, ELBS, 2010.
2. Vincent Del Toro, Electrical Engineering Fundamentals, 2nd Edition, PHI, 2003.
3. V.N. Mittle, Basic Electrical Engineering, TMH, 2000.
4. T.K. Nagsarkar and M.S. Sukhija - Oxford Higher Education, 2013.
5. M.S. Naidu and Kamakshaiah – Introduction to Electrical Engineering, Tata McGraw Hill, 2005.
6. V.K. Mehta – Principles of Electrical Engineering and Electronics, S. Chand & Co, Dec 2006.
7. Cotton H., Electrical Technology, BI Publications, Feb 2004.

Online resources:

www.electrical4u.com

www.faadooengineers.com

www.nptel.ac.in

www.oupinheonline.com

www.cosmolearning.com

**SYLLABI FOR B.E I-SEMESTER
BASIC ENGINEERING MECHANICS**

(Common to Civil, Mechanical and EEE Branches)

Instruction: 3Hrs /week	SEE Marks :60	Course Code : ES100CE
Credits : 3	CIE Marks: 40	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
<i>Objectives of this course are to:</i>	<i>At the end of the course, students will be able to:</i>
<ol style="list-style-type: none">1. Explain the resolution of a system of forces (coplanar, spatial, concurrent, non-concurrent) and compute their resultant.2. Solve particle equilibrium problem using equation of equilibrium3. Determine forces in the members of a truss4. Perform analysis of bodies lying on rough surfaces.5. Locate the centroid of a body and also compute the area moment of inertia of standard and composite sections.	<ol style="list-style-type: none">1. Determine resultant of forces acting on a body.2. Analyse equilibrium of a body subjected to a system of forces.3. Perform analysis of trusses using method of joints and method of sections.4. Solve problem of bodies subjected to friction.5. Find the location of centroid and calculate moment of inertia and polar moment of inertia of a given section.

UNIT-I:

Force Systems: Rectangular components, moment, couple and resultant of two dimensional and three dimensional force systems.

UNIT-II :

Equilibrium of Force Systems: Free body diagram, Equations of equilibrium, Equilibrium of planar and spatial system.

UNIT-III :

Determinate Trusses: Analysis of plane trusses like warren girder, Pratt truss, fink truss etc using method of joints and method of sections.

UNIT-IV:

Friction: Laws of friction. Application to simple systems, Connected systems and belt friction, Wedge friction.

UNIT-V:

Centroid and Moment of Inertia: Centroids of lines, areas and volumes, Moment of inertia of areas, Composite areas, Polar moment of inertia, Radius of gyration.

Suggested Books:

1. Singer F.L "Engineering Mechanics", Harper & Collins, Singapore, 3rd Edition 2011.
2. Timoshenko S.P and Young D.H "*Engineering Mechanics*", McGraw Hill International Edition, 1983
3. Andrew Pytel., Jaan Kiusalaas., "*Engineering Mechanics*", Cengage Learning, 2014.

Reference Books:

1. Beer F.P & Johnston E.R Jr. Vector "*Mechanics for Engineers*", TMH, 2004.
2. Hibbeler R.C & Ashok Gupta, "*Engineering Mechanics*", Pearson Education, 2010.
3. Tayal A.K., "*Engineering Mechanics – Statics & Dynamics*", Umesh Publications, 2011.
4. Basudeb Bhattacharyya., "*Engineering Mechanics*", Oxford University Press, 2008.
5. Meriam. J. L., "*Engineering Mechanics*", Volume-I Statics, John Wiley & Sons, 2008.

Online Resource:

1. NPTEL Course (www.nptel.ac.in)
2. Virtual labs (www.vlab.co.in)

**SYLLABUS FOR B.E I-SEMESTER
ENGINEERING GRAPHICS-I
(Common to CIVIL, MECH AND EEE branches)**

Instruction: 2+3Hrs /week	SEE Marks :60	Course Code : ES120CE
Credits : 4	CIE Marks: 40	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
<i>Objectives of this course are to:</i>	<i>At the end of the course, students will be able to:</i>
<ol style="list-style-type: none"> 1. Impart skills of drawing instruments and their use to convey exact and complete information of any object. 2. Explore various scales in Engineering practice 3. Construct engineering curves. 4. Prepare orthographic projections of points, lines, planes and solids 	<ol style="list-style-type: none"> 1. Identify the qualities of precision and accuracy. 2. Convey technical information effectively through sketches / drawings. 3. Construct engineering curves with different methods. 4. Develop the conics using different methods, cycloidal and involutes. 5. Draw the orthographic projection of points, lines, planes and solids.

UNIT-I:

Introduction: Instruments and their uses, lettering, types of lines and dimensioning methods.

Scales: Reduced and Enlarged scales, Representative fraction, Scales: plain, diagonal and vernier.

UNIT-II:

Engineering curves: Ellipse, Parabola, Hyperbola, Cycloid, Epicycloid, Hypocycloid and Involute.

UNIT-III:

Projections of points and straight lines: Orthographic projection, Projection of points placed in different quadrants, Projection of straight lines inclined to one and two reference planes placed in first quadrant only, Traces.

UNIT-IV:

Projections of planes: Projection of perpendicular planes, Oblique planes, Traces of planes, use of Auxiliary plane method.

UNIT-V:

Projection of solids: Polyhedra, Solids of revolution, Projections of solids in simple position (prisms, pyramids, cylinders and cone), axis inclined to one plane, Axis inclined to both the reference planes, Projection of solids using auxiliary plane method.

Text book:

1. Bhatt N.D. "Elementary Engineering Drawing", Charotar Publishers, 2014.

Reference Books:

1. Thomas E French, Charles J Vierck, Robert J. Foster, "Engineering Drawing and Graphic Technology", McGraw Hill Education, 1993.
2. Gill P.S. "Engineering Drawing: Geometrical Drawing", SK Kataria & sons, 2012.
3. Venugopal.K "Engineering Drawing and Graphics Plus Autocad", New Age International (P) Ltd., New Delhi, 2010.
4. Siddiquee A.N "Engineering Drawing with a Primer on Autocad", Prentice hall of India Ltd., New Delhi, 2004.
5. Basanth Agrawal, Agrawal C.M "Engineering Graphics" First Edition, Tata McGraw Hill, 2012
6. BVR Gupta, M Raja Roy, "Engineering Drawing with AutoCad", IK Int Pvt Ltd, 2009

Learning Resource:

1. NPTEL Course and (www.nptel.ac.in)
2. Virtual labs (www.vlab.co.in)

**SYLLABUS FOR B.E I-SEMESTER
ENGINEERING DRAWING-I
(Common to CSE, IT and ECE branches)**

Instruction: 2+3Hrs /week	SEE Marks :60	Course Code : ES130CE
Credits : 4	CIE Marks: 40	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
<i>Objectives of this course are to:</i>	<i>At the end of the course, students will be able to:</i>
<ol style="list-style-type: none"> 1. Impart skills of drawing instruments and their use to convey exact and complete information of any object. 2. Explore various scales in Engineering practice 3. Construct engineering curves and polygons. 4. Prepare orthographic projections of points, lines, planes and solids 	<ol style="list-style-type: none"> 1. Identify the qualities of precision and accuracy. 2. Convey technical information effectively through sketches / drawings. 3. Construct engineering curves with different methods. 4. Develop the conics using different methods. 5. Draw the orthographic projection of points, lines, planes and solids.

UNIT-I:

Introduction: Instruments and their uses, lettering, types of lines and dimensioning methods.

Scales: Reduced and Enlarged scales, Representative fraction, Scales: plain, diagonal and vernier.

UNIT-II:

Engineering curves: Ellipse, Parabola, Hyperbola and their applications.

Polygons: Regular polygons using general method.

UNIT-III:

Projections of points and straight lines: Orthographic projection, Projection of points placed in different quadrants, Projection of straight lines inclined to one and two reference planes placed in first quadrant only, Traces.

UNIT-IV:

Projections of planes: Projection of perpendicular planes, Oblique planes, Traces of planes.

UNIT-V:

Projection of solids: Polyhedra, Solids of revolution, Projections of solids in simple position (prisms, pyramids, cylinders and cone), axis inclined to one plane, Axis inclined to both the reference planes. Projection of solids using auxiliary plane method.

Text book:

1. Bhatt N.D. "Elementary Engineering Drawing", Charotar Publishers, 2014.

Reference Books:

1. Thomas E French, Charles J Vierck, Robert J. Foster, "Engineering Drawing and Graphic Technology", McGraw Hill Education, 1993.
2. Gill P.S. "Engineering Drawing: Geometrical Drawing", SK Kataria & sons, 2012.
3. Venugopal.K "Engineering Drawing and Graphics Plus Autocad", New Age International (P) Ltd., New Delhi, 2010.
4. Siddiquee A.N "Engineering Drawing with a Primer on Autocad", Prentice hall of India Ltd., New Delhi, 2004.
5. Basanth Agrawal, Agrawal C.M "Engineering Graphics" First Edition, Tata McGraw Hill, 2012
6. BVR Gupta, M Raja Roy, "Engineering Drawing with AutoCad", IK Int Pvt Ltd, 2009

Learning Resource:

1. NPTEL Course and (www.nptel.ac.in)
2. Virtual labs (www.vlab.co.in)

DEPARTMENT OF MECHANICAL ENGINEERING
ENGINEERING WORKSHOP-I
SYLLABUS FOR BE I-SEMESTER UNDER CBCS

Instruction: 2Hrs /week	SEE Marks :50	Course Code : ES121ME
Credits : 1	CIE Marks: 25	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	At the end of the course students should be able to:
<ul style="list-style-type: none">• know basic workshop processes be able to Read and interpret job drawings• adopt safety practices while working with various tools• identify, select and use various marking, measuring, holding, striking and cutting tools & equipments.• practice the correct use of hand tools• manufacture items within tolerance and inspect the job for specified dimensions	<ul style="list-style-type: none">• demonstrate an understanding of and comply with workshop safety regulations.• identify and use marking tools, measuring equipment and to work to prescribed accuracies.• undertake jobs connected with Mechanical Engg.viz. fitting, carpentry and sheet metal.• apply basic Electrical Engineering knowledge for house wiring practice.
FITTING <ol style="list-style-type: none">1. Template fitting (square fit)2. V- groove fit3. Drilling and Tapping4. Assembly of pulley on a shaft with key (demo)	
HOUSE WIRING <ol style="list-style-type: none">1. Two lamps in (a)series (b) parallel with 3 pin plug and switches2. Staircase wiring3. Tube light wiring4. LT distribution panel with loads (demo)	
CARPENTRY <ol style="list-style-type: none">1. Half-lap joint2. Dove-tail joint3. Bridle joint4. Wood turning operation (demo)	

SHEETMETAL WORKS

1. Rectangular box with soldering
2. Rectangular scoop with soldering
3. Making a Funnel with soldering
4. Making a T-Joint(demo)

Learning Resources:

1. *P. Kannaiah & K. L. Narayana* "Workshop manual" 2nd Ed., Scitech publications (I) Pvt. Ltd., Hyderabad.
2. *K. Venugopal, Dr. V. Prabhu Raja, G. Sreekanjana* "Workshop Manual" 1st Ed.. Anuradha Publications 2012

Online Resources:

1. www.technologystudent.com
2. www.mewelding.com

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
SCHEME OF INSTRUCTION AND EXAMINATIONS FOR B.E II SEMESTER W.E. F 2017-18

Course Code	II SEMESTER				Scheme of Instruction Hours per week				Scheme of Examination		Credits	
	Course Name				L	T	D	P	Duration in Hrs	Max. Marks		
LABS									SEE	CIE		
HS211EH	English Language Lab - II				-	-	-	2	3	50	30	1
BS111PH	Engineering Physics Lab (CSE, EEE, MECH)				-	-	-	2	3	50	30	1
BS121CH	Engineering Chemistry Lab (CIVIL ,ECE, IT)				-	-	-					
ES211CS	Object Oriented Programming Lab (ECE, EEE, MECH,CIVIL)				-	-	-	2	3	50	30	1
ES211EC	Introduction to Electronics Engineering (CSE) Lab											
ES211IT	Data Structures lab (IT)											
ES221ME	Engineering Workshop-II (CIVIL, MECH, EEE)					-						
ES231EE	Basic Electrical Engineering Lab (ECE)				-			2	3	50	30	1
ES241CS	CSE workshop (CSE)											
ES251IT	IT Lab (IT)											
Total					15	7	3	8		620	400	23
<i>* SEE- Semester End Examination * CIE- Continuous Internal Evaluation</i>					33					1020		

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

SYLLABUS OF B.E –II SEMESTER

ENGLISH -II

(Common to all branches)

Instruction: 2+1Hrs /week	SEE Marks :60	Course Code : HS210EH
Credits : 2	CIE Marks: 40	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
<i>The course will enable the students to :</i>	<i>At the end of the course students should be able to:</i>
<ul style="list-style-type: none">• participate confidently in discussions both in the classroom and outside.• work in teams, share ideas, agree and disagree politely.• communicate in interpersonal and intrapersonal contexts.• read and write letters independently.• write sustained piece of texts exhibiting qualities of coherence and cohesion.	<ul style="list-style-type: none">• adapt and cooperate with people in varied contexts to function effectively in teams.• give and receive clear messages to communicate effectively, individually as well as in groups.• compose coherent letters, reports, essays and resumes for varied situations.• interpret and write a piece of text with coherence and cohesion.• identify words for use both in informal and formal contexts.• construct sentences accurately for speaking and writing.

UNIT-I

Interpersonal Communication—Johari Window, Knapp's relationship escalation model; Styles of Communication; Persuasion techniques; Team building skills and team work- By Bruce Tuckman.

UNIT-II

Oral communication; Functions of oral communication; Informal talks and situational dialogues; telephone etiquette, Speaking strategies-introducing a person and speaking about his achievements, team-presentations (Advanced level).

UNIT-III

Communication through letters: Structure of business letters: letters of complaint, letters of enquiry and responses; application letters and resume writing for jobs, circulars, notices, net- etiquette, short-reports on events.

UNIT-iv

Advanced Remedial English:- Active and Passive Voice; Subject-Verb agreement; Relative clauses; Vocabulary:- Words often confused, One-word Substitutes; Phrasal verbs, Collocations, Idiomatic usage.

UNIT-5 Reading Texts

Goodbye Party for Miss Pushpa- T.S Nissim Ezekiel. **-Poem**
The Romance of a Busy Broker- O. Henry- **Short Story**

Suggested textbook:

1. Meenakshi Raman and Sangeeta Sharma Technical communication, 2nd Edition, Principles and Practice, Oxford University Press, 2014

Suggested reading:

1. E.Suresh Kumar, P. Sreehari, J. Savithri, Essential English-Orient Blackswan 2011.
2. A.K Ramchandran et al., Business communication, Macmillan - 2009.
3. Sunitha Mishra., C. Murali Krishna., Communication Skills for Engineers, Pearson, 2004.
4. Monipally Mathew., Craft of Business Writing, Tata McGraw Hill.
5. Allen and Waters., How English Works.
6. Grillet. F., Developing Reading Comprehension

**SYLLABUS OF B.E –II SEMESTER
ENGLISH LANGUAGE LABORATORY-II
(Common to all branches)**

Instruction: 2Hrs /week	SEE Marks :50	Course Code : HS211EH
Credits : 1	CIE Marks: 30	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
<i>The course will enable the students to :</i>	<i>At the end of the course students should be able to:</i>
<ul style="list-style-type: none">• use language effectively without mother tongue influence.• converse in various situations.• make paper and power point presentations.• Listen to audio clippings, exchange dialogues and write short texts.• speak effectively using discourse markers.• read and understand various forms of texts and review them.	<ul style="list-style-type: none">• pronounce words in isolation as well as in spoken discourse.• research and sift information to make presentations.• comprehend the tone and tenor of various types of speeches from media and classroom lectures.• listen for gist and make inferences from various speeches.• identify connectives and transitions in various speeches.• use connectives and make transitions effectively while speaking.

PHONETICS LAB- TOPICS

Aspects of Connected Speech: Strong forms, weak forms, contracted forms, elision.

Word Stress: Primary stress, secondary stress, functional stress, rules of word stress.

Rhythm and Intonation: Introduction to rhythm and intonation; Major patterns of intonation in English with their semantic implications.

**INTERACTIVE COMMUNICATION SKILLS LAB-TOPICS
(Advanced Level)**

Role Play: - Use of dialogues in a variety of situations and settings.

Public Speaking: Advantages of public speaking, essentials of an effective speech, researching, planning and delivering a speech.

Debate: Differences between a debate and a group discussion, essentials of debate, concluding a debate.

Group discussion: Objectives of GD, Types of GDs; Initiating, Continuing, and concluding a GD.

Presentation Skills: Making Effective Presentations, Expressions which can be used in Presentations, Use of Non-Verbal Communication, Coping with Stage Fright, Handling Question and Answer Session; Use of Audio-Visual Aids, PowerPoint Presentations.

Audio and Videos, News Clippings and Live Matches: - To Develop LSW, Dialogue – Writing, Commentaries, Dialogue Delivery.

READING SKILLS LAB- TOPICS

Use of Dictionary and Thesaurus: Advantages of using a Dictionary and Thesaurus; Effective use of Dictionary and Thesaurus.

Book reviews and Film Reviews - Oral and Written

Vocabulary: - related to different types of texts, Note-taking and note-making

Reading: - Reading different types of texts and analyzing the different registers.

Newspapers, Magazines, Short-Stories, One- act plays.}

Suggested book:

1. Jayshree Mohanraj, Kandula Nirupa Rani and Indira Babbellapati Speak Well, Orient BlackSwan.

Reference Books:

2. T. Balasubramanian: A textbook of English Phonetics for Indian students, Macmillan, 2008.
3. Priyadarshi Patnaik : Group discussion and Interviews, Cambridge University Press India Private Limited 2011.
4. Daniel Jones: Cambridge English Pronouncing Dictionary - A definitive guide to contemporary English Pronunciation
5. Reading Cards (Eng400): Orient Blackswan.

Note: Students will be tested on activities pertaining to all the labs through the written form, spoken form, computer based and viva, both for CIE and SEE.

**SYLLABUS OF B.E II-SEMESTER
ENGINEERING MATHEMATICS-II
(Common to all branches)**

Instruction: 3+1Hrs /week	SEE Marks :60	Course Code : BS210MA
Credits : 3	CIE Marks: 40	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
<i>The course will enable the students to :</i>	<i>At the end of the course students should be able to:</i>
2. Study the concepts of matrices, Eigen values and Eigen vectors, Diagonalization and canonical form of a quadratic form. 3. Solve various first order differential equations using various elementary techniques and learn its applications. 4. Solve various Higher order homogeneous and non-homogeneous differential equations with constant and variable coefficients and applications. 5. Learn the concepts of Ordinary and Singular points of an equation, Power series solution method and about the Legendre's Differential Equation. 6. Know the methods to solve the special differential equations Bessel's Differential equations and know their properties and learn the special functions viz., Beta and Gamma functions.	a) Find rank of a given matrix, solve system of linear equations, diagonalize a given matrix and reduce a quadratic form to canonical form and solve problems based on numerical methods. b) Identify the differential equations and solve them, model the real time electrical engineering problems viz., LR and RC Circuits into differential equations and solve. c) Solve various higher order Linear Differential Equations, model the real time electrical engineering problems viz., LC and LCR circuits into differential equations and solve them by using the various applicable techniques learnt. d) Solve the differential equations using power series solution method and solve the special differential equation i.e., Legendre's Differential Equation. e) Solve Bessel's Differential equations and derive the Recurrence relations, properties and to evaluate improper integrals using Beta and Gamma functions.

UNIT – I: Matrices (12 classes)

Rank of a Matrix - Linearly independence and dependence of Vectors - Eigen values and Eigenvectors- Characteristic equation- Cayley - Hamilton Theorem(without proof)- Diagonalization using Similarity Transformation- Reduction of Quadratic form to canonical form

UNIT–II: Ordinary Differential Equations of first order(14 classes)

Exact first order differential equations - Integrating factors- Linear first order equations - Bernoulli's equation - Riccati's Equation- Clairaut's Equation- Applications of First Order Differential Equations -Orthogonal trajectories of a given family of curves(Cartesian and Polar families) – LR and RC Circuits.

UNIT – III: Linear Differential equations (12 classes)

Solutions of Homogeneous and Non Homogeneous equations with constant coefficients- Method of Variation of Parameters – Solution of Euler-Cauchy Equation –Applications of linear differential equations to LC and LCR circuits

UNIT – IV: Series Solution of differential equations (12 classes)

Ordinary and Singular points of an equation – Power series solution - Legendre's differential equation and Legendre's polynomials- Rodrigue's formula – Generating function for Legendre's polynomials $P_n(x)$ – Recurrence relations for Legendre's polynomials $P_n(x)$ – Orthogonal property of Legendre's polynomials $P_n(x)$

UNIT–V: Special Functions & Bessel's Differential Equations(10 classes)

Beta, Gamma function and their properties.

Bessel's differential equation and Bessel functions –Recurrence Relations for $J_n(x)$ - Generating function for $J_n(x)$.

Suggested Books:

1. R.K.Jain & S.R.K.Iyengar, Advanced Engineering Mathematics 3rd Edition, , Narosa Publishing House.
2. Dr. B.S Grewal, Higher Engineering Mathematics 40th Edition, Khanna Publishers.

Reference Books:

1. Wylie & Barrett, Advanced Engineering Mathematics, Tata Mc Graw Hill, New Delhi.
2. Erwin Kreyszig, Advanced Engineering Mathematics, 8th Edition, John Wiley & Sons, Inc.
3. M.D.Raisinghania, Ordinary and Partial Differential equations, , S.Chand & Company Ltd.,1997.
4. A R Vasishtha, Matrices, , Krishna Prakashan Media, Meerut

SYLLABUS OF B.E II-SEMESTER
APPLIED PHYSICS
(Common to all Branches)

Instruction: 2+1Hrs /week	SEE Marks :60	Course Code : BS220PH
Credits : 2	CIE Marks: 40	Duration of SEE : 3 Hrs

<i>Course objectives</i>	<i>Course outcomes</i>
<p><i>Students will be able to learn</i></p> <ul style="list-style-type: none"> • Fundamentals of wave mechanics and relativistic mechanics. • the crystal structure and crystal defects • electrical conduction theories of solids • properties of dielectric materials • characteristics of ferromagnets and superconductors 	<p><i>At the end of the course students will be able to</i></p> <ul style="list-style-type: none"> • Analyse various quantum mechanical systems. • Differentiate materials based on their structure and properties. • Classify solids and their applications • Distinguish different dielectric materials • Compare various magnetic materials and superconductors.

UNIT- I: CRYSTALLOGRAPHY (8 Hours)

- **Crystal Systems:** Introduction-Space lattice, Basis, Unit cell, Bravais lattices and crystal systems, Miller Indices, X-ray diffraction, Bragg's law, powder x-diffraction method
- **Defects in crystals:** Point Defects - Schottky and Frankel defects, concentration of Schottky and Frankel defects in a crystal. Property-(point) defect dependence in a crystal.

UNIT-II: Quantum and Relativistic Mechanics (10 Hours)

- Concept of de-Broglie wave - wavelength of matter waves of particles - Concept of wave function - Schrödinger time dependent and time independent wave equations- Applications: particle in an Infinite Square well (particle in a box) potential. Quantum tunneling: Potential barrier (qualitative treatment)
- Frames of references-inertial and non-inertial frames, postulates of special theory of relativity. Galilean and Lorentz transformations, length contraction, time dilation, Relativistic velocity addition, relativistic mass, mass-energy equivalence.

UNIT- III: BAND THEORY OF SEMICONDUCTORS (6 Hours)

- Free electron theory: features, merits and demerits, salient features of Kronig-Penny model -Classification of solids as conductors, insulators and semiconductors based on band theory, Fermi energy. Carrier concentration in intrinsic semiconductors and its conductivity, Hall effect.
- Principle, working and construction of Solar cell, LED and photo diode

UNIT-IV: DIELECTRIC MATERIALS (9 Hours)

- Polar and non-polar dielectrics, types of dielectric polarizations, Expression for electronic and ionic polarizabilities, Frequency and temperature dependence of dielectric polarizations, phase transitions and structure of BaTiO₃.
- dielectric loss, Dielectric breakdown, internal field in solids, Lorentz field, Clausius- Mossotti equation.

UNIT-V: MAGNETIC MATERIALS AND SUPERCONDUCTORS (9 Hours)

- Ferro, antiferro and ferri-magnetic materials, Weiss molecular field theory of ferromagnetism- magnetic domains- hysteresis curve-Soft and hard magnetic Materials-Ferrites fundamentals
- General properties of super conductors – Meissner effect. Type I and Type II superconductors - BCS Theory (in brief) - Josephson's Junction –SQUIDS- Applications of superconductors

Suggested Books:

1. Avadhanulu M. N. and. Kshirsagar P.G, Textbook of Engineering Physics, 5th Edition (2014), S.Chand & Co. Pvt. Ltd, New Delhi
2. Gupta S.L and Sanjeev Gupta A text book of Engineering Physics, Revised Ed, (2014) Dhanpath Rai Pub. New Delhi
3. David Halliday, Robert Resnick and Walker, Principles of Physics Extended, 10th Ed (2014) Wiley Eastern limited, Jefferson City, USA.

Reference Books:

4. Kittel .C, Introduction to Solid State Physics, 8th Ed (2005), Wiley Eastern, New Jersey, USA
5. Pillai. S.O., Solid State Physics, 7th Ed (2015), New Age International publishers, New Delhi
6. Robert Resnick, Introduction to special Relativity (2005) John Wiley, New Delhi
7. Neeraj Mehta, Applied Physics for Engineers, (2011), Prentice-Hall of India Pvt.Ltd, New Delhi

Online resources:

8. <http://ocw.mit.edu/courses/physics>
9. <http://oyc.yale.edu/physics>
10. www.nptel.ac.in

**SYLLABUS OF B.E II- SEMESTER
APPLIED CHEMISTRY
(Common to all branches)**

Instruction: 2+1Hrs /week	SEE Marks :60	Course Code : BS230CH
Credits : 2	CIE Marks: 40	Duration of SEE : 3 Hrs

OBJECTIVES	OUTCOMES
The course will enable the students to:	At the end of the course students should be able to:
<ol style="list-style-type: none">1. Acquaint with types of batteries and their applications.2. Discuss different types of polymers and their applications.3. Emphasize upon the quantity and quality of fossil fuels and need for bio-diesel.4. To appraise rocket propellants and high energy materials.5. Get acquainted with the principles of chemical analysis.	<ol style="list-style-type: none">1. Discuss the construction, electrochemistry and applications of selected primary batteries and secondary lead-acid battery.2. Explain effect of functionality on structure of polymers, different types of classification of polymers, types of polymerization, polymer processing techniques, preparation, properties and applications of few plastics and elastomers.3. Apply the chemical principles of combustion to calculate the quantity of air required for combustion of a given fuel.4. Calculate proximate and ultimate analysis of coal.5. Discuss the properties and applications of selected solid, liquid and gaseous fuels.6. Explain the principle of rocket propulsion, classification and characteristics of good propellants.7. Explain the methods of preparation and applications of high energy materials namely lead azide, TNT, Nitro glycerine and RDX8. Discuss the principle, working and applications of selected instrumental methods in chemical analysis of materials.

UNIT-I: Batteries

Introduction, basic concepts of battery (power density and energy density), primary and secondary cells.

Primary batteries: construction and electrochemistry of Zn-Carbon battery, Zn-alkaline battery- HgO-Zn battery and Ag₂O-Zn battery.

Secondary batteries: construction and electrochemistry of lead-acid battery- advantages and limitations.

UNIT-II: Polymers

Introduction, Degree of polymerization, Functionality of monomers & its effect on the structure of polymers, Classification of polymers-a) Homo and Co-polymers, b) Homo chain and Hetero chain polymers. c) Plastics, Elastomers, Fibers & Resins d) Thermoplastics & Thermosets. Molecular weight: Number average and Weight average methods, numerical. Glass transition temperature (T_g), factors affecting T_g.

Types of Polymerization: Addition and Condensation polymerization.

Plastics: Preparation, properties and applications of Aramid (Kevlar), Polymethylmethacrylate (PMMA), Polycarbonate and Phenol-formaldehyde (Bakelite).

Elastomers: Natural rubber- Structure – Vulcanization and advantages.

Artificial Rubbers: Preparation, properties and applications of Buna-S, Butyl and Silicone rubbers.

UNIT-III: Fuels

Introduction, Classification, requisites of a good fuel. Calorific value (CV)- HCV, LCV (Definition and relationship), Calculation of CV using Dulong's formula, Numericals. Chemistry of combustion-Numericals on volume-weight and weight-weight methods.

Solid Fuels: Coal: Proximate & Ultimate analysis of coal and their significance -Numericals.

Liquid Fuels: Fractions of crude oil, Composition and CV of Gasoline, Cracking: Fixed bed catalytic cracking method, Knocking and its significance, Octane number, Enhancement of quality of gasoline by reforming and anti- knock agents. Leaded & unleaded petrol, Power alcohol. Catalytic converters and their role in reducing the toxicity of automobile exhaust emissions. Composition and CV of diesel oil, Cetane number.

Gaseous Fuels: Composition and applications of CNG, LPG.

Bio-diesel: Source, chemistry of transesterification, merits of bio diesel.

UNIT-IV: Rocket Propellants & High energy materials

Rocket Propellants- Principle of rocket propulsion, classification, characteristics of good propellants.

High energy materials- Introduction, classification, precautions during storage, characteristics of explosives (oxygen balance-numericals) preparation of lead azide, TNT, Nitro glycerine and RDX

UNIT-V: Instrumentation techniques in chemical analysis

- a) Visible Spectroscopy:** Beer- Lamberts law- estimation of copper (II) in the given sample.
- b) Atomic Absorption Spectroscopy:** Principle-working and applications.
- c) Flame Photometer:** Principle-working and applications
- d) Thermal Analysis Techniques:** Introduction, Thermogravimetry (TGA) and Differential Scanning Calorimetry (DSC): principle and applications.

Suggested Books:

1. P.C.Jain and Monica Jain, "Engineering Chemistry", Dhanpat Rai Pub, Co., New Delhi (2002)
2. Applied Chemistry "A text for Engineering & Technology" Springer (2005).
3. S. Dara "A text book of engineering chemistry" S.Chand&Co.Ltd., New Delhi (2006).
4. Gowarikar V. R., Viswanathan N. V. and JayadevSreedhar, "Polymer Science", New Age International (P) Ltd., New Delhi, 2011.
5. Palanna O. G., "Engineering Chemistry", Tata Mc.Graw Hill Education Pvt. Ltd., New Delhi, 2009.
7. Shasi Chawla, "Text Book of Engineering Chemistry", Dhanpat Rai Publishing Company, NewDelhi (2008).

Reference books:

1. A textbook of Polymer Science: Fred, Billmeyer Jr., Wiley India 3rd Ed.
2. Samir S., "Fuels and Combustion", India Universities Press, Hyderabad, 2009.
3. Dell R. M. and R and D. A. J., "Understanding Batteries", Royal Society of Chemistry, UK, 2001.
4. Billmeyer F. W., "Text book of Polymer Science", Wiley-Inter Science, New York, 2002.
5. Joel R. Fried, "Polymer Science and Technology", Prentice Hall of India Pvt. Ltd., India, 2003.
6. Arora M. G., Singh M and Yadav M.S, "Polymer Chemistry", Anmol Publications, New Delhi, 2003.
7. Bahadur P. and Sastry N.V., "Principles of Polymer Science", Narosa Publishing House, New Delhi, 2002.

Online resources:

1. www.nptel.ac.in
2. <http://ndl.iitkgp.ac.in>
3. <http://ocw.mit.edu>

SYLLABUS OF B.E II- SEMESTER
OBJECT ORIENTED PROGRAMMING USING C++
(Common to Civil, ECE, EEE and Mech branches)

Instruction: 3+1Hrs /week	SEE Marks :60	Course Code : ES210CS
Credits : 3	CIE Marks: 40	Duration of SEE : 3 Hrs

Course objectives	Course outcomes
Students should be able to	At the end of the course, students will be able to
<ul style="list-style-type: none">• Understand basic notions of object oriented programming• Acquire object-oriented problem solving skills• Write programs in C++	<ul style="list-style-type: none">• Explain Object Oriented Programming concepts using C++• Design programs using functions, input/output operations, decision making and looping constructs• Create classes using object oriented design principles• Design programs using inheritance, polymorphism and exception handling• Describe basic data structures using OOP concepts

UNIT-I

Introduction to C++: Programming paradigms, Object Oriented Programming Concepts, Advantages and Applications of OOPs.

Variables and Assignments, Input and Output, Data Types, Expressions, Simple Flow Control and Control Structures.

Defining Classes: Structures, Classes, Abstract Data Types.

UNIT-II

Functions: Call by Value, Call by Reference, Parameters using Procedural Abstraction, Testing and Debugging Functions.

I/O Streams as an introduction to Classes and Objects.

Arrays: Introduction to Arrays, Arrays in Functions, Programming with Arrays and Multidimensional Arrays.

UNIT-III

Strings, Pointers and Dynamic Arrays, Recursion, Constructors, Destructors, Copy Constructors.

Static Polymorphism: Function and Operator Overloading, Friend Functions.

UNIT-IV

Inheritance: The Notion of Inheritance, Derived Classes, Overriding, Virtual Base Class.

Runtime Polymorphism, Virtual Functions.

Function Templates and Class Templates.

UNIT-V

Exception Handling: Exception Handling Basics, Programming Techniques for Exception Handling

Pointers and Linked Lists: Nodes and Linked Lists, Implementation of Stacks and Queues using Arrays and Linked Lists, Operations on Linked Lists- Inserting a Node, Deleting a Node, Searching for a Node.

Suggested Books:

1. Walter Savitch, "Problem solving with C++", 6th Edition, Pearson Education, 2009.

Reference Books:

2. Behrouz A.Forouzan, Richard F. Gilberg, "Computer Science, A Structured Approach using C++", 2nd Edition, Cengage Learning, 2010.
3. E. Balaguruswamy, "Object-Oriented Programming with C++", 6th Edition, Tata Mc-Graw Hill, 2013.
4. S.B.Lippman. J Lajoie , "C++ Primer" 3rd Edition, AW Publishing Company, 2007.
5. Paul Dietel, Harvey Dietel, "C How to Program", 6th Edition, PHI, 2010.
6. Bjarne Stroustrup, "The C++ Programming Language", 4th Edition, Addison-Wesley, 2013.

Online Resources:

1. <http://nptel.ac.in/courses/106105151/>
2. <https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-096-introduction-to-c-january-iap-2011>

SYLLABUS OF B.E II- SEMESTER
OBJECT ORIENTED PROGRAMMING USING C++ LAB
(Common to Civil, ECE, EEE and Mech branches)

Instruction: 2Hrs /week	SEE Marks :50	Course Code : ES211CS
Credits : 1	CIE Marks: 30	Duration of SEE : 3 Hrs

Course objectives	Course outcomes
Students should be able to	At the end of the course, students will be able to
<ul style="list-style-type: none">• Write, compile and debug programs in C++.• Formulate problems and implement in C++.• Acquire skills to solve computing problems.	<ul style="list-style-type: none">• Write and debug programs in C++ language• Choose appropriate data types, functions, decision and looping constructs to develop C++ programs• Implement OOP functionalities such as class, overloading, dynamic memory allocation• Develop programs using inheritance, polymorphism, file I/O, templates and exception handling techniques• Implement operations on basic data structures

1. Programs on matrix and complex numbers using classes.
2. Programs using constructors, destructors and copy constructors.
3. Programs on dynamic memory allocation for arrays.
4. Programs on static data members and string manipulations.
5. Programs on friend class.
6. Programs on function overloading and operator overloading.
7. Programs on inheritance.
8. Programs on virtual functions, dynamic polymorphism.
9. Programs on function templates, class templates and exception handling.
10. Programs on bubble sort, selection sort and insertion sort.
11. Program on operations in a singly linked list.
12. Program on implementation of stacks and queues using arrays and linked list.

Suggested Books:

1. Walter Savitch, "Problem solving with C++", 6th Edition, Pearson Education, 2009.

Reference Books:

1. Behrouz A.Forouzan, Richard F. Gilberg, "Computer Science, A Structured Approach using C++", 2nd Edition, Cengage Learning, 2010.
2. Balaguruswamy, "Object-Oriented Programming with C++", 6th Edition, Tata Mc-Graw Hill, 2013.
3. S.B.Lippman. J Lajoie , "C++ Primer" 3rd Edition, AW Publishing Company, 2007.
4. Paul Dietel, Harvey Dietel, "C How to Program", 6th Edition, PHI, 2010.
5. Bjarne Stroustrup, "The C++ Programming Language", 4th Edition, Addison-Wesley, 2013.

Online Resources:

1. <http://nptel.ac.in/courses/106105151/>
2. <https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-096-introduction-to-c-january-iap-2011/>

**SYLLABUS OF B.E II-SEMESTER
INTRODUCTION TO ELECTRONICS ENGINEERING (For CSE)**

Instruction: 3+1Hrs /week	SEE Marks :60	Course Code : ES210EC
Credits : 3	CIE Marks: 40	Duration of SEE : 3 Hrs

Course Objective:	Course Outcomes
<ul style="list-style-type: none"> • To understand the characteristics and operation of different electronic devices. • To study the working of transistorized amplifiers and oscillators. • To gain the basic knowledge of digital logic circuits. • To study the working principle of different types of transducers. 	<p>At the end of the course students will be able to:</p> <ul style="list-style-type: none"> • Employ different electronic devices to build electronic circuits such as rectifiers, voltage regulators. • Describe the functioning of electronic circuits such as amplifiers and oscillators. • Implement digital circuits such as adders and subtractors using logic gates. • Have the knowledge of certain electronic devices such as SCR, DIAC, TRIAC, UJT. • Convert real time electrical signals into corresponding signals using different types of transducers.

UNIT - I

Semiconductor Theory: Classification of semiconductors, Energy Levels, Conductivity, Mobility, Diffusion and Drift currents, Hall Effect, Characteristics of P-N Junction diode, Parameters and Applications.

Rectifiers: Half wave and Full wave Rectifiers (Bridge, center tapped), ripple factor and efficiency, comparison of rectifiers, Filters, types of filters, Rectifiers with and without filters

UNIT - II

Transistors: Bipolar Junction Transistor, Construction, Types, Working principle, Configurations, Transistor parameters, Transistor as an amplifier, Problems, h-parameter equivalent circuits. Field effect transistor, Construction and working of JFET, Parameters and applications of JFET, Types of MOSFET (depletion and enhancement), Comparison of BJTs with JFETs; **Regulators:** Characteristics of Zener Diode, Voltage Regulation, Zener diode as voltage regulator, IC voltage regulators.

UNIT - III

Feedback Concepts – Basic concept of feedback, Types of feedback, Feedback topologies, General characteristics of Negative feedback amplifiers; **Oscillators** – Classification of Oscillators, Types, LC Type and

RC Type Oscillators and Crystal Oscillators (Qualitative treatment only)

UNIT - IV

Operational Amplifiers – Introduction, Characteristics of ideal Operational amplifier, Operational amplifier stages, Parameters, Open loop and closed loop configurations, Applications (Adder, Subtractor, Voltage follower, Integrator, Differentiator, Instrumentation Amplifier); **Digital circuits:** Boolean Algebra, Logic Gates, Combinational circuits such as half and full adders, half and full subtractors.

UNIT - V

Data Acquisition systems: Introduction, Classification of transducers, Capacitive transducer, Inductive transducer, LVDT, Electrical strain gauges, Temperature transducers (Thermocouple), Piezoelectric transducer, Photoelectric transducer; **Photo Electric Devices:** Photo diode, Photo Transistor, LED, LCD; **Industrial Devices:** SCR, TRIAC, DIAC, UJT - Construction, Working principle and Characteristics only; **Display Systems:** Constructional details of C.R.O and Applications.

Suggested Reading:

1. S.Shalivahan, N. Suresh Kumar, A Vallavea Raj Electronic Devices and Circuits Tata McGraw Hill, 2003.
2. Jacob Milman & C., Halkias, Electronic devices Eighth Edition, Reprinted, Mc Graw Hill,1985.
3. Ramakanth A. Gayakwad, Op-AMPS and Linear Integrated Circuits, 3rd edition, Prentice Hall of India,1985.
4. Mooris Mano, Digital design, 3rd edition, Prentice Hall of India,2002.
5. Cooper, Electronic Measurement and Instrumentations.

**SYLLABUS OF B.E II-SEMESTER
INTRODUCTION TO ELECTRONICS ENGINEERING LAB(For CSE)**

Instruction: 2Hrs /week	SEE Marks :50	Course Code : ES211EC
Credits : 1	CIE Marks: 30	Duration of SEE : 3 Hrs

Course Objective:	Course Outcomes
<ul style="list-style-type: none"> • Verify the characteristics of various electronic devices. • Understand the functioning of voltage regulator and rectifiers. • Perform different arithmetic operations using operational amplifier. • Understand the working of logic gates to implement adder and subtractor. 	<p>At the end of the course students will be able to:</p> <ul style="list-style-type: none"> • Verify input/output characteristics of active devices and to compute their parameters. • Analyse the functioning of voltage regulators, rectifiers and oscillators. • Perform operations such as addition, subtraction, comparison of voltage levels using operational amplifier. • Implement digital adders and subtractors using logic gates.

1. Characteristics of Semiconductor (Si and Ge) and Zener diodes
2. CRO Applications
3. Full wave rectifier with and without filter
4. Zener Voltage Regulator
5. Characteristics of BJT (CB and CE)
6. Characteristics of FET
7. Amplifier with and without feedback
8. RC Phase shift oscillator
9. Hartley oscillator and Colpitt's Oscillator
10. Applications of Operational Amplifier: Adder, Subtractor, Comparator.
11. Verifications of Logic gates
12. Realization of Half and Full adder

Suggested Reading :

1. Paul B. Zbar, Albert P. Malvino , Michael A. Miller, Basic Electronics, A Text-Lab Manual, 7th Edition, TMH, 1994.
2. Paul B. Zbar, Industrial Electronics, A Text – Lab Manual, 3rd Edition, TMH, 1983.

General Note :

There should not be more than 2 students per batch while performing any of the lab experiments.

- (a) Mini Project cum design exercise: The students must design, rig-up, and test the circuits wherever possible and should carry out the experiments individually.
- (b) This exercise carries sessional marks of 15 out of 30, while the remaining 15 marks are for the remaining lab exercises

**SYLLABUS OF B.E II-SEMESTER
DATA STRUCTURES (IT Branch)**

Instruction: 3+1Hrs /week	SEE Marks :60	Course Code : ES210IT
Credits : 3	CIE Marks: 40	Duration of SEE : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Explore efficient storage mechanisms for easy access, design and implementation of various linear data structures.	<ol style="list-style-type: none">1. Demonstrate the concepts of programming techniques such as pointers, dynamic memory allocation, structures and abstract data type.2. Identify appropriate linear data structure to solve a problem.3. Implement programs using linear data structures.4. Illustrate the usage of linked lists for various applications.5. Apply different sorting and searching to a given problem.

UNIT 1

Review C , Arrays, Pointers ,Dynamic Memory Allocation, Structures and Unions

Introduction to Abstract Data Types.

UNIT 2

Stacks: Stack Abstract Data Type, Representation of a Stack using Arrays – Implementation of Stack Operations - Stack Applications: Infix to postfix Transformation - Evaluating Arithmetic Expressions.

UNIT 3

Queues: Queue Abstract Data Type- Representation of a Queue using array - Implementation of Queue Operations - Applications of Queues - Circular Queues.

UNIT 4

Linked List: Introduction – Singly Linked list -Operations on a singly linked list -Dynamically Linked Stacks and Queues - Doubly linked list-Operations on a doubly linked list

UNIT 5

Searching: Linear Search, Binary Search.

Sorting: Insertion sort – Quick sort – Merge Sort.

Learning Resources:

1. Ellis Horowitz, Sartaj Sahni and Susan Anderson-Freed, Fundamentals of Data Structures in C, 2/e, Universities Press, 2008
2. Mark Allen Weiss, —Data Structures and Algorithm Analysis in C, Second Edition, Pearson Education, 1996
3. Seymour Lipschutz, Data Structures with C, McGraw Hill, 2011
4. Robert Kruse, C.L.Tondo, Bruce Leung, Shashi Mogalla , — Data Structures and Program Design in C, Second Edition, Pearson Education, 2007
5. Jean-Paul Tremblay, Paul G. Sorenson, 'An Introduction to Data Structures with Application', TMH, 2nd Edition.
6. Richard F, Gilberg, B.A. Forouzan, "Data Structures, A Pseudocode Approach with C", Cengage, 2nd Edition
7. <http://nptel.ac.in/courses/106103069/>

**SYLLABUS OF B.E II-SEMESTER
DATA STRUCTURES LAB (IT Branch)**

Instruction: 2Hrs /week	SEE Marks :50	Course Code : ES211IT
Credits : 1	CIE Marks: 30	Duration of SEE : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Develop skills in design and implementation of abstractions of various linear structures and their practical applications.	<ol style="list-style-type: none">1. Write programs using dynamic memory allocation.2. Perform operations on data structures such as stack, queues, linked lists.3. Implement various searching and sorting techniques.

1. Program using Arrays, Pointers & Dynamic Memory Allocation.
2. Program using Structures & Unions.
3. menu driven program that implements Stacks using arrays for the following operations
a)create b)push c)pop d) display
4. menu driven program that implements Queues using arrays for the following operations
a)create b)insert c)delete d) display
5. menu driven program that implements Circular Queues for the following operations
a)create b)Insert c)delete d) display
6. Implementation of Infix to Postfix Conversion
7. Implementation of evaluation of postfix expression.
8. Implementation of Single Linked List.
9. Implementation of Stacks using Single Linked List.
10. Implementation of Queues using Single Linked List.
11. Implementation of Doubly Linked List.
12. Implementation of Linear Search.
13. Implementation of Binary Search.
14. Implementation of Quick Sort.
15. Implementation of Merge Sort.

**SYLLABI FOR B.E II-SEMESTER
BASIC ENGINEERING MECHANICS**

(Common to CSEI, ECE and IT Branches)

Instruction: 3Hrs /week	SEE Marks :60	Course Code : ES100CE
Credits : 3	CIE Marks: 40	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
<i>Objectives of this course are to:</i>	<i>At the end of the course, students will be able to:</i>
6. Explain the resolution of a system of forces (coplanar, spatial, concurrent, non-concurrent) and compute their resultant.	6. Determine resultant of forces acting on a body.
7. Solve particle equilibrium problem using equation of equilibrium	7. Analyse equilibrium of a body subjected to a system of forces.
8. Determine forces in the members of a truss	8. Perform analysis of trusses using method of joints and method of sections.
9. Perform analysis of bodies lying on rough surfaces.	9. Solve problem of bodies subjected to friction.
10. Locate the centroid of a body and also compute the area moment of inertia of standard and composite sections.	10. Find the location of centroid and calculate moment of inertia and polar moment of inertia of a given section.

UNIT-I:

Force Systems: Rectangular components, moment, couple and resultant of two dimensional and three dimensional force systems.

UNIT-II :

Equilibrium of Force Systems: Free body diagram, Equations of equilibrium, Equilibrium of planar and spatial system.

UNIT-III :

Determinate Trusses: Analysis of plane trusses like warren girder, Pratt truss, fink truss etc using method of joints and method of sections.

UNIT-IV:

Friction: Laws of friction. Application to simple systems, Connected systems and belt friction, Wedge friction.

UNIT-V:

Centroid and Moment of Inertia: Centroids of lines, areas and volumes, Moment of inertia of areas, Composite areas, Polar moment of inertia, Radius of gyration.

Suggested Books:

1. Singer F.L "Engineering Mechanics", Harper & Collins, Singapore, 3rd Edition 2011.
2. Timoshenko S.P and Young D.H "*Engineering Mechanics*", McGrawHill International Edition, 1983
3. Andrew Pytel., Jaan Kiusalaas., "*Engineering Mechanics*", Cengage Learning, 2014.

Reference Books:

1. Beer F.P & Johnston E.R Jr. Vector "*Mechanics for Engineers*", TMH, 2004.
2. Hibbeler R.C & Ashok Gupta, "*Engineering Mechanics*", Pearson Education, 2010.
3. Tayal A.K., "*Engineering Mechanics – Statics & Dynamics*", Umesh Publications, 2011.
4. Basudeb Bhattacharyya., "*Engineering Mechanics*", Oxford University Press, 2008.
5. Meriam. J. L., "*Engineering Mechanics*", Volume-I Statics, John Wiley & Sons, 2008.

Online Resource:

1. NPTEL Course (www.nptel.ac.in)
2. Virtual labs (www.vlab.co.in)

SYLLABUS OF B.E –II SEMESTER
BASIC ELECTRICAL ENGINEERING LAB (for ECE branch)

Sub Ref Code: ES231EE	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:50 Marks	Instruction: 2 hrs

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
To impart the practical knowledge on measuring of 3-phase power, performance and speed control of DC machines and AC machines.	1. Identify suitable instruments in the application of DC and AC machines. 2. Analyze the performance and speed control of DC Machines. 3. Analyze the performance and speed control of Induction motor. 4. Analyze the performance of an alternator. 5. Analyze the performance of single phase transformer. 6. Compute a 3-phase power by using 2-Watt meters.

LIST OF EXPERIMENTS:

1. Magnetization curve of a separately excited D.C. generator.
2. The load characteristics of a shunt generator.
3. The load characteristics of a series generator.
4. Performance characteristics of a D.C. shunt motor
5. The load characteristics of a D.C. series motor
6. The performance characteristic of DC compound motor.
7. Speed control of D.C. motor
8. O.C. and S.C. tests on single phase transformer
9. Load test on single phase transformer
10. Performance characteristics of a three phase induction motor
11. Speed control methods of induction motor
12. Regulation of alternator by O.C. and S.C. tests.
13. Measurement of three-phase power by two Wattmeter method.

**SYLLABUS OF B.E –II SEMESTER
CS WORKSHOP (for CSE Branch)**

Sub Ref Code: ES241CS	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 30 Marks	SEE:50 Marks	Instruction: 2 hrs

Course objectives	Course outcomes
Students should be able to	At the end of the Course Students will be able to
<ul style="list-style-type: none">• Assemble/disassemble PC Hardware and understand the installation of Operating system• Acquire skills on HTML programming and implement basic Python programs	<ul style="list-style-type: none">• Understand various parts of the computer system by Assemble/disassemble of a system• Install Operating system & Antivirus software and configure for the network• Apply the knowledge of HTML & CSS to create static web pages• Implement Structured and OOP language concepts using Python

I. PC Hardware & Software

1. Identify the peripherals of a computer. (Processor, Memory chips, Mother Board, Disk Drives, and Controller Card such as AGP board, Network Cards, Sound Card, as well as Parallel and Serial Ports etc.,)
2. Disassembling and Assembling PC in working condition.
3. Load the Operating Systems with partitions for Windows and Linux, configure for Network.
4. Hardware trouble shooting, Software trouble shooting

II. Content Management System: Joomla

Introduction and need for a CMS, Types of CMS

Installation: Installation of WAMP on local PC, Localhost configuration, Joomla installation,

Joomla Global Settings, User types and rights, Media Management

Understanding Article Manager, User Manager, Menu Manager, Template Managers, Plugins

Develop a mini CMS application

1. Publishing Web Pages (Using HTML editors to create personal web sites & CSS)
2. Create the Web-Page (With title, text, frames, hyperlinks to some sites, pictures, lists, tables, fonts and colors) without using any web authoring tools.
3. Search Engines & Netiquette
4. Cyber Hygiene

III. Python

Basic Syntax: Interactive Mode Programming, Script Mode Programming. Variable Types, Basic Operators, Decision Making, Loops

Advance Data Types: Numbers, Strings, Lists, Tuples, Dictionary.

Lists: Introduction, Accessing list, Operations, Working with lists, Function and Methods.

Tuple: Introduction, Accessing tuples, Operations, Working, Functions and Methods.

Dictionaries: Introduction, Accessing values in dictionaries, Working with dictionaries.

Functions: Defining a function, Calling a function, Types of functions, Function Arguments, Anonymous functions, Global and local variables.

Modules: Importing module, Math module, Random module, Packages, Composition.

Files Input-Output: Printing on screen, Reading data from keyboard, Opening and closing file, Reading and writing files, Functions.

Exception Handling: Exception, Exception Handling, Except clause, Try, finally clause, User Defined Exceptions.

OOPs concept: Class and object, Attributes, Inheritance, Overloading, Overriding, Data hiding.

Suggested Books:

1. Introduction to Information Technology, IITL Education Solutions Limited (2005), Pearson Education.
2. Govindarajulu, IBM PC and Clones: Hardware, Troubleshooting and Maintenance, 2nd Edition, (2008), Tata McGraw-Hill
3. Peter Norton, Introduction to Computers, 6th Edition (2004), Tata McGraw-Hill,.

Reference Books:

1. Kate J. Chase, PC Hardware and A+ Hand book, (2004), Microsoft Press.
2. Matthew Johnson, An Introduction to Python for Undergraduate engineers (2013), Wiki Books

Online Resources:

1. <https://docs.joomla.org/>

**SYLLABUS OF B.E II-SEMESTER
ENGINEERING MECHANICS
(Common to Civil, Mech and EEE Branches)**

Instruction: 3Hrs /week	SEE Marks :60	Course Code : ES220CE
Credits : 3	CIE Marks: 40	Duration of SEE : 3 Hrs

COURSE OBJECTIVES	COURSE OUTCOMES
<i>Objectives of this course are to:</i>	<i>At the end of the course, students will be able to:</i>
<ol style="list-style-type: none"> 1. Determine the mass moment of inertia and product of inertia of standard and composite sections. 2. Understand the concepts of dynamics and its principles. 3. Explain kinetics and kinematics of particles, projectiles, curvilinear motion, centroidal motion and plane motion of rigid bodies. 4. Impart the concepts of work-energy method and its applications to translation, rotation and plane motion. 5. Impart the concept of impulse momentum relation 	<ol style="list-style-type: none"> 1. Compute mass moment of inertia and product of inertia of standard and composite section. 2. Distinguish between statics and dynamics and differentiate between kinematics and kinetics. 3. Understand the kinetics and kinematics of a body undergoing rectilinear, curvilinear, rotatory motion and rigid body motion. 4. Solve problems using work energy equations for translation, fixed axis rotation and plane motion. 5. Solve problems using impulse momentum equation

UNIT-I Product of Inertia & Mass moment of Inertia: Product of inertia , Mass moment of inertia for solid and composite bodies, Radius of gyration.

UNIT-II Kinematics: Rectilinear motion, Curvilinear motion, Projectile motion, Velocity and acceleration, Types of rigid body motion, and its analysis in a plane.

UNIT-III Kinetics: Analysis as a particle, Analysis as a rigid body in translation, Fixed axis rotation. Rolling bodies, Plane motion.

UNIT-IV Work Energy: Principles of work-energy and its application to translation, Fixed axis rotation and plane motion.

UNIT-V Impulse and momentum: Introduction, linear impulse-momentum, principle of conservation of linear momentum, loss of kinetic energy.

Suggested Books:

1. Singer F.L "Engineering Mechanics", Harper & Collins, Singapore, 3rd Edition 2011.
2. Timoshenko S.P and Young D.H., "Engineering Mechanics", McGraw Hill International Edition, 1983.
3. Andrew Pytel, Jaan Kiusalaas, "Engineering Mechanics", Cengage Learning, 2014.

Reference Books:

1. Beer F.P & Johnston E.R Jr. Vector, "Mechanics for Engineers", TMH, 2004.
2. Hibbeler R.C & Ashok Gupta, "Engineering Mechanics", Pearson Education, 2010.
3. Tayal A.K., "Engineering Mechanics – Statics & Dynamics", Umesh Publications, 2011.
4. Basudeb Bhattacharyya, "Engineering Mechanics", Oxford University Press, 2008.
5. Meriam. J. L., "Engineering Mechanics", Volume-II Dynamics, John Wiley & Sons, 2008.

Online Resource:

1. NPTEL Course (www.nptel.ac.in)
2. Virtual labs (www.vlab.co.in)

**SYLLABUS OF B.E II_SEMESTER
ENGINEERING GRAPHICS-II**
(For Civil, Mech and EEE)

Sub Ref Code: ES230CE	Credits: 04	Sem Exam Duration: 3 Hrs
CIE: 40Marks	SEE:60 Marks	Instruction: 3+2 hrs

Course Objectives	Course Outcomes
<i>Objectives of this course are to:</i>	<i>At the end of the course, students will be able to:</i>
<ol style="list-style-type: none"> 1. Explain the principles involved in Section of simple solids 2. Develop surfaces of simple solids 3. Explain intersection of cylinder with cylinder and cylinder with cone 4. Differentiate between isometric view and isometric projection 5. Draw orthographic views from pictorial views 	<ol style="list-style-type: none"> 1. Draw sectional views of simple solids 2. Develop the lateral surfaces of simple solids 3. Prepare orthographic views of intersection of solids. 4. Visualize isometric view of simple planes, solids and combined solids 5. Construct orthographic views of simple objects from their pictorial views

UNIT-I Sections of Solids: True shape of sections, sections of prisms, pyramids, cylinders and cones.

UNIT- II Development of Surfaces: Basic concepts of development of surfaces, Methods of development – Parallel line development and radial line development, Development of prisms, pyramids, Cylinders and cones.

UNIT-III Intersection of Surfaces: Intersection of cylinder and cylinder, cylinder and cone.

UNIT-IV Isometric Projections: Isometric scale, Isometric projections of prisms, pyramids, cylinders, cones, spheres, and combinations of two or three solids.

UNIT-V Conversion of Isometric Views to Ortho-graphic views: Drawing orthographic views from Isometric views for simple objects.

Text book:

1. Bhatt N.D. "Elementary Engineering Drawing", Charotar Publishers, 2014.

Reference Books:

1. Thomas E French, Charles J Vierck, Robert J. Foster, "Engineering Drawing and Graphic Technology", McGraw Hill Education, 1993.
2. Gill P.S. "Engineering Drawing: Geometrical Drawing", SK Kataria & sons, 2012.
3. Venugopal.K "Engineering Drawing and Graphics Plus Autocad", New Age International (P) Ltd., New Delhi, 2010.
4. Siddiquee A.N "Engineering Drawing with a Primer on Autocad", Prentice hall of India Ltd., New Delhi, 2004.
5. Basanth Agrawal, Agrawal C.M "Engineering Graphics" First Edition, Tata McGraw Hill, 2012
6. BVR Gupta, M Raja Roy, "Engineering Drawing with AutoCad", IK Int Pvt Ltd, 2009

Online Resource:

1. NPTEL Course and (www.nptel.ac.in)
2. Virtual labs (www.vlab.co.in)

**SYLLABUS OF B.E II_SEMESTER
ENGINEERING DRAWING -II
(For CSE, IT & ECE)**

Sub Ref Code: ES240CE	Credits: 04	Sem Exam Duration: 3 Hrs
CIE: 40Marks	SEE:60 Marks	Instruction: 3+2 hrs

Course Objectives	Course Outcomes
<i>Objectives of this course are to:</i>	<i>At the end of the course, students will be able to:</i>
<ol style="list-style-type: none"> 1. Explain the principles involved in Section of simple solids 2. Develop surfaces of simple solids 3. Explain intersection of prism with prism and cylinder with cylinder. 4. Differentiate between isometric view and isometric projection 5. Draw orthographic views from pictorial views 	<ol style="list-style-type: none"> 1. Draw sectional views of simple solids 2. Develop the lateral surfaces of simple solids 3. Prepare orthographic views of intersection of solids. 4. Visualize isometric view of simple planes, solids and combined solids 5. Construct orthographic views of simple objects from their pictorial views

UNIT-I Sections of Solids: True shape of sections, sections of prisms, pyramids, cylinders and cones in simple positions and axis inclined to one reference plane only.

UNIT-II Development of Surfaces: Basic concepts of development of surfaces, Methods of development – Parallel line development and radial line development, Development of prisms, pyramids, Cylinders and cones.

UNIT-III Intersection of Surfaces: Intersection of prism and prism, cylinder and cylinder.

UNIT-IV Isometric Projections: Isometric scale, Isometric projections of prisms, pyramids, cylinders, cones, spheres, and combinations of two solids.

UNIT-V Conversion of Isometric Views to Ortho-graphic views: Drawing orthographic views from Isometric views for simple objects.

Text book:

1. Bhatt N.D. "Elementary Engineering Drawing", Charotar Publishers, 2014.

Reference Books:

1. Thomas E French, Charles J Vierck, Robert J. Foster, "Engineering Drawing and Graphic Technology", McGraw Hill Education, 1993.
2. Gill P.S. "Engineering Drawing: Geometrical Drawing", SK Kataria & sons, 2012.
3. Venugopal.K "Engineering Drawing and Graphics Plus Autocad", New Age International (P) Ltd., New Delhi, 2010.
4. Siddiquee A.N "Engineering Drawing with a Primer on Autocad", Prentice hall of India Ltd., New Delhi, 2004.
5. Basanth Agrawal, Agrawal C.M "Engineering Graphics" First Edition, Tata McGraw Hill, 2012
6. BVR Gupta, M Raja Roy, "Engineering Drawing with AutoCad", IK Int Pvt Ltd, 2009

Online Resource:

1. NPTEL Course and (www.nptel.ac.in)
2. Virtual labs (www.vlab.co.in)

**SYLLABUS OF B.E 1/4 –SECOND SEMESTER
ENGINEERING WORKSHOP-II
(Common to Civil, Mechanical and EEE)**

Sub Ref Code: ES221ME	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:50 Marks	Instruction: 2 hrs

Course objectives	Course outcomes
<p>The course enable the students to</p> <ol style="list-style-type: none"> adopt safety practices while working with various tools identify, select and use various marking, measuring, holding, striking and cutting tools & equipments. manufacture items within tolerance and inspect the job for specified dimensions demonstrate knowledge of welding process selection and capabilities. carry out exercise in metal removal process by using various machines. 	<p>Students will be able to</p> <ol style="list-style-type: none"> demonstrate an understanding of and comply with workshop safety regulations. identify and use marking out tools, measuring equipment and to work to prescribed tolerances. produce components in the trades of smithy, welding and plumbing. understand the manufacturing process of turning, thread cutting and milling

- SMITHY:**
- Flattening (round to square cross section)
 - Bending Operation (U-shape)
 - S-shape hook
 - Fullering Operation (demo)

- WELDING:**
- Bead formation
 - Butt joint
 - Lap joint
 - Gas welding/Spot welding (demo)

- PLUMBING:**
- Introduction of tools, joints, couplings and valves etc.
 - Pipe thread cutting and making single joint with coupling and Tap connection
 - Water shower connection with reducer coupling
 - Geyser connection(demo)

- MACHINING:**
- Plain turning and step turning
 - Taper turning
 - Thread Cutting
 - Milling operation (demo)

Learning Resources:

- P. Kannaiah & K. L. Narayana "Workshop manual", Scitech publications (I) Pvt. Ltd., 2 Ed. 2009
- K. Venugopal, Dr. V. Prabhu Raja, G. Sreekanjana, "Workshop Manual", Anuradha Publications 1st Ed. 2012
- S.K. Hajra Choudhury, A.K. Hajra Choudhury, Nirjar Roy, "Workshop Technology-I&II" Media Promoters & Publishers Pvt. Limited, 2008

Online Resources:

- www.technologystudent.com
- www.mewelding.com

**SYLLABUS OF B.E 1/4 –SECOND SEMESTER
IT LAB (for IT branch)**

Sub Ref Code: ES251IT	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:50 Marks	Instruction: 2hrs

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Acquire basic skills for using Linux operating system and writing python scripts.	<ol style="list-style-type: none">1. Install Linux operating system and use a desktop environment.2. Configure and use Linux shell .3. Write and run basic python scripts.

UNIT – I

Introduction to Linux, Installing Linux, Running Linux from USB Drive, Understanding Linux file system , listing files and directory attributes, making files and directories, listing and changing permission and ownership, Understanding X Windows System and Desktop Environments, Navigating through Linux Desktop and managing files.

UNIT – II

Understanding the Linux Shell, Using the shell from console or terminals, Using command history and tab completion, Connecting and expanding commands, Understanding aliases ,Making shell settings permanent, using man pages and other documentation.

UNIT – III

Introduction to Python, running a python script , writing comments, using variables, operators, strings and text, format specifiers , printing information, passing command line arguments, prompting users, parameters, unpacking variables.

UNIT - IV

Decision making : if and else if, repetition : while loops and for loops, lists, operations on list , tuples, dictionaries , operations on dictionaries.

UNIT – V

Defining functions, passing arguments to functions , returning values from functions, modules, handling exceptions,reading and writing files.

Learning Resources

1. Allen B. Downey, Think Python, 2nd Edition, Green Tea Press
2. <https://www.python.org>
3. <https://www.linuxjourney.com>

FACULTY MEMBERS

DEPARTMENT OF CIVIL ENGINEERING

Department Phone: 040-23146010 and 6011

1	Dr. B.Sridhar	Prof. & HOD	9949887009
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14	Ms. N. Niharika	Asst.Prof.	8977559305
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18	Mr. S. Kesav kumar	Asst.Prof.	9716136602
19	Mr. M. Srivvamsi Krishna	Asst.Prof.	7386121386
20	Ms. R. Sowmya	Asst.Prof.	9441019785

DEPARTMENT OF CSE

Department Phone: 040-23146020 and 6021

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24	Ms. M. Akhila	Asst. Prof.	8885774756
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27	Ms. A. Mounika	Asst. Prof.	9703935618

DEPARTMENT OF ECE

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30	Ms. Vibha D. Kulkarni	Asst. Prof.	9966208656
31	Mr. N. Bala Thimmaiah	Asst. Prof.	8099524900
32	Mr. Khajavali Shaik	Asst. Prof.	9701973312

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9	Ms. Pranava Gopu	Asst. Prof.	9966744474
10	Ms. K.V. Divya Sree	Asst. Prof.	9177213312
11	Mr. N. Uday Kumar	Asst.Prof.	8341560704
12	Mr. D. Harish Kumar	Asst.Prof.	9441677937
13	Mr. P. Ravi	Asst.Prof.	9989600881
14	Mr. P. RajasekharaReddy	Asst.Prof.	9177207976
15	Mr. U. Elisha	Asst.Prof.	9949632656
16	Mr. Dhaunjaya Rao	Asst.Prof.	9110583707

DEPARTMENT OF IT

Department Phone: 040-23146050 and 6051

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2	Dr. N.Vasantha	Professor	9849590500
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4	Ms. S. Rajyalakshmi	Asst. Prof.	9059842554
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7	Mr. G. Rajashekhar	Asst. Prof.	9849871143
8	Mr. M. Vishnu Chaitanya	Asst. Prof.	8686709187
9	Mr. K. Shyam Sunder Reddy	Asst. Prof.	9866595900
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12	Ms.C. Sirisha	Asst.Prof.	9618258122
13	Ms. C. Swetha	Asst.Prof.	9160400975
14	Ms. K. Madhuri	Asst.Prof.	9908180408
15	Ms. Bariki Leelavathy	Asst.Prof.	
16	Ms. G K Pallavi	Asst.Prof.	9966078844
17	Ms. Parul Dongre	Asst.Prof.	9701766210
18	Ms. Meghana G. Raj	Asst.Prof.	9000106448
19	Ms.J. Sunitha	Asst.Prof.	8686363901
20	Mr. G. Srinivas Rao	Asst.Prof.	9966461156
21	Ms. Ch. Swapna	Asst.Prof.	9177586877
22	Ms. S.K. Chaya Devi	Asst.Prof.	9912021322
23	Mr. M. KrishnaKishore	Asst.Prof.	
24	Ms. B.S. Mounika Yadav	Asst.Prof.	

DEPARTMENT OF MECHANICAL ENGINEERING

Department Phone: 040-23146060 and 6061

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4	Dr. T.Ramamohan Rao	Prof.	9440886144
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6	Mr. S.Venkataiah	Assoc.Prof.	9985087394
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8	Mr. K.Veladri	Assoc.Prof.	9490684448
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13	Mr. S. Sreekrishna	Asst. Prof.	9494872379
14	Mr. M. Sudhakar	Asst. Prof.	9290094197
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18	Dr. P.V.S. Subhashini	Asst. Prof.	9866802894
19	Mr. B. Sandeep	Asst. Prof.	9492427678
20	Mr. N. B. Samba Murthy	Asst. Prof.	9492036139
21	Mr. Suda Venkateswarulu	Asst. Prof.	8985639463
22	Mr. Venu Gopal Reddy	Asst. Prof.	9948129687
23	Ms.S. Keerthana	Asst. Prof.	9030031715
24	Mr. T. Krishna Chaitanya	Asst. Prof.	9704689575
25	Mr. Muhammad Lughman	Asst. Prof.	9553557869
26	Mr. V. Pramood	Asst. Prof.	7760953214
27	Ms. Ch. Amareshwari	Asst. Prof.	9491878147
28	Ms. Vedula Aiswarya	Asst. Prof.	8333946038

DEPARTMENT OF H & SS

Department Phone: 040-23146094

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2	Ms. G.Meena	Asst. Prof. (Sr. Scale)	9866557628
3	Ms. K. Jhansi Rani	Asst. Prof. (Sr. Scale)	9866331812
4	Ms. M.Jyothi	Asst. Prof. (Sr.Scale)	9247780569
5	Ms. B.Sheela Rani Simon	Asst. Prof.	9849721097
6	Mr. T.Sunand Emmanuel	Asst. Prof.	9849027278
7	Dr. Ruby Lois	Asst. Prof.	9951719607
8	Dr. T. Sai Lakshmi	Asst. Prof.	9573471456

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03	Dr. N.Vasudha	Assoc. Prof.	9441779840
04	Mr. R. Hari Kishore	Asst. Prof.	9247553181
05	Ms. C. Naga Anuradha	Asst. Prof.	9949592116
06	Mr. M. Venkateshwar Rao	Asst. Prof.	9959924151
07	Ms. V. Sri Ramani	Asst. Prof.	9390991496

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Department Phone: 040-23146092

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03	Dr. V.Ravi Kumar	Assoc. Prof.	9866979357
04	Dr. G. Ramadevudu	Asst. Prof. (Sr. Scale)	9247802706
05	Mr. R. Nagaraju	Asst. Prof.	9849452878

DEPARTMENT OF CHEMISTRY

Department Phone: 040-23146093

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02	Prof. M. Satyanarayana Reddy	Professor	9849295357
03	Dr. P.Venu Gopal	Assoc. Prof.	9866723518
04	Ms. B.K.Rama Devi	Assoc. Prof	9948090017
05	Ms. P. Sukanya	Asst. Prof.	9948158437
06	Dr. K. Rajani Kumar	Asst. Prof.	9885584411
07	Ms. Velpula Angelina	Asst. Prof.	8977178719

LIBRARY AND SPORTS

Department Phone: 040-23146095 and 6096

1.	Mr.Ch. Gopala Krishna	Library Asst.	9440717497
2	Mr.G.VijayaAdityaReddy	Asst. Physical Director	9966057678

CAMPUS PLACEMENTS

BE STUDENTS' PLACEMENT DETAILS - 2016 BATCH

Branch	CSE	ECE	EEE	IT	MECH	CIVIL	Total
No. of Students Eligible	126	130	61	123	120	60	620
Gross Selections	190	246	94	169	158	69	926
Net Selections	123	122	50	113	79	42	529
% of Selections	97.62	93.85	81.97	91.87	65.83	70.00	85.32

S.No.	Details	Total
1	No of students with 1 Offer(s)	298
2	No of students with 2 Offer(s)	134
3	No of students with 3 Offer(s)	93
4	No of students with 4 Offer(s)	19
5	No of students with 5 Offer(s)	04
6	No of students with 6 Offer(s)	01
Net Selections		549

STUDENTS PLACEMENT INFORMATION OF 2017 BATCH

S.No	Organization	Package (Lakhs p.a. Rs.)	CSE	ECE	EEE	IT	Mech.	Civil
1	JPMorgan Chase & Co.	6.7	2	-	-	2	-	-
2	Accolite Software India Pvt. Ltd	10	3	-	-	-	-	-
3	Pega Systems	7.2	17	-	-	8	-	-
4	Oracle India Private Ltd., (Vertical : UGBU)	9	6	2	-	4	-	-
5	Deloitte Consulting (India) Private Limited (Verticals : Advisory & Consulting)	6.2	8	8	2	5	-	-
6	Serendebyte Inc. (Through Pega)	6.20 to 4.50	7	-	-	8	-	-
7	Infosys (Through Pega)	4.5	15	-	-	16	-	-
8	TechMahindra (Through Pega)	4.5	8	-	-	7	-	-
9	TCS (Through Pega)	4.5	18	-	-	27	-	-
10	JK Techno Soft (Through Pega)	4.5	9	-	-	4	-	-
11	VirtusaPolaris (Through Pega)	4	-	-	-	7	-	-
12	JPMorgan Chase & Co.	6.7	3	-	-	3	-	-
13	Infosys	3.25	10	58	24	12	45	16
14	Cognizant	3.35	8	42	15	8	35	13
15	Accenture	3.34	23	78	38	24	69	39
16	United Health Group	3.6	2	27	6	4	-	-
17	Zensar (Through Pega)	5	3	-	-	4	-	-
18	GGK Tech	3.5	3	4	-	-	-	-
19	NTT Data	3	-	-	-	-	1	-
20	CDK Global	4.5	1	1	-	2	-	-
21	Black Knight Financial Services	2.4	1	-	-	2	-	-
22	Nomura Research Institute Financial Technologies India Pvt. Ltd.	4.5	2	4	1	-	-	-
23	Thomson Reuters (Internship & Employment)	10.0K PM	-	-	-	-	-	-
24	Media Mint	2.4	-	-	1	1	1	-
25	Hyundai Mobis India Limited	4	-	-	1	-	1	-
26	Happ Tech	2.4	1	1	-	-	-	-

27	AMD R&D Center India Pvt Ltd (Internship-25K) & Employment	7.2	-	-	-	-	-	-
28	Capgemini India	3	4	3	1	1	-	-
29	RedPine Signals Inc.	3.5	-	1	-	1	-	-
30	ADP India	4	2	-	-	2	-	-
31	Golden Hills Capital	3.5	-	-	-	1	-	-
32	Synactive India Pvt Ltd	5	1	-	-	1	-	-
33	Applaud Solutions	5.5	1	-	-	1	-	-
34	Hexagon Capability Center India Pvt. Ltd.(HCCI)	4.75	1	-	-	1	1	-
35	EnergyTech Global Private Limited	4.25	2	-	-	2	-	-
36	GENY MEDIUM	3.00 to 3.50	1	2	-	1	-	-
37	Oracle India Private Ltd., (Vertical : Applications Development)	9.00	-	-	-	1	-	-
38	Electronic Arts Games (India)	10.3	1	-	-	-	-	-
39	Pure Software Private Ltd	2.75	-	3	3	1	-	1
40	Genpact	1.80	-	1	2	-	-	-
41	NCR Corporation	5.50	2	3	-	1	-	-
42	L&T Technology Services Limited	3.50	-	1	-	-	-	-
43	ADTRAN Networks India Pvt. Ltd. (Internship 20 K per month)	5.50	9	3	-	1	-	-
44	Samsung R&D Institute India	7.50	1	-	-	-	-	-
45	CoreCompete	4.25	2	-	-	1	-	-
46	Medha Servo Drives Pvt. Ltd.	3.01	-	-	-	-	1	-
47	Netcracker Technology	5.50	2	4	-	-	-	-
48	Hostanalytics Software Pvt Ltd. (Internship 15K per month)	6.30	1	-	-	-	-	-
49	Computenext India Private Limited	2.00	1	-	-	-	-	-
50	Qualcomm TechnologiesInc.	9.20	9	-	-	4	-	-
51	Schneider Electric (Female Drive)	4.75	-	-	-	-	3	-
52	CAPIOT Software Private Limited	4.00	-	-	-	1	-	-
53	Hyundai Motor India Engineering Pvt. Ltd.	3.50	-	-	-	-	1	-

