VASAVI COLLEGE OF ENGINEERING

(Autonomous)

Ibrahimbagh, Hyderabad-31, Telangana State

(Approved by AICTE and Affiliated to Osmania University)

Established in 1981

STUDENT HAND BOOK 2016-2017

Sponsored by

VASAVI ACADEMY OF EDUCATION

HYDERABAD

VASAVI COLLEGE OF ENGINEERING(AUTONOMOUS)
Ibrahimbagh, Hyderabad-31

Sponsored by
VASAVI ACADEMY OF EDUCATION, Hyderabad

College Vision

Striving for a symbiosis of technological excellence and human values

College Mission

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

Quality Policy

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

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
2016-17

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

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ABOUT THE COLLEGE

VISION

Striving for a symbiosis of technological excellence and human values

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 **33** 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.

MISSION

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

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).

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 185 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.

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

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.

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 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 Gouri Prasad	:	Member
Sri V.M. Parthasarathi	:	Member
Sri Lagisetty Subbagurumurthi	:	Member
Prof. 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
MANAGEMENT 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, *Chairman*
   Former Vice Chancellor, Osmania University, Hyderabad
2. Prof. Anup Beniwal, UGC Nomimee
3. State Government nominee
4. University Nominee
5. Sri P Ramamohan Rao
6. Prof. T.V. Subba Rao
7. Sri M. Krishna Murthy
8. Sri P. V. Ratnam
9. Sri P. Balaji
10. Dr. M.R. Madhav
11. Sri Bommidala Srikrishna Murthy
12. Dr. K. Jaya Sankar
13. Dr. N. Vasantha
14. Dr. K. Jaya Sanker, Principal

Principal **:** Dr. K. Jaya Sanker
Telephone No: +91-40-23146002
Fax : +91-40-23146090
Website : www.vce.ac.in
E-mail : principal@staff.vce.ac.in

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 (2016-17)
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 of974computer 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 185 highly qualified and experienced faculty members including 2 Adjunct Professors, 22 Professor, 30 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 30 mbps, separate lines of 10Mbps and 250 Mbps 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

Particulars	***Availability***
No. of Servers	14
No. of Computers	974
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 acquition tool box, Neural Network tool box Optimization tool box, Fuzz logic tool box Parallel computing tool box	Mathworks
2	Aneka, NET cloud computing software Enterprize 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	Borland C Suite	Borland & Turbo
15	Developer 2000	Oracle
16	Red Hat Enterprise Linux 6.0	Red Hat

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 11845 titles and 101523 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
ACM Digital Library	1138
Springer Mechanical	49
Total GIST E-Journals	1405
DELNET CONSORTIUM (IESTC E-Journals -2016)	1152
DELNET E-Journals	817
Total e-journals	3374
DELNET MEMBERSHIP E-Books	335
Journals and magazines Print version	106

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, Department of H&SS conducts events and competitions through ***Speak Easy Club*** and ***Vasavi Talkies.*** To bring the hidden talents and nurture the culture innovative dreams of the students Vasavi has Mahathi – '***Music Club'***, Kirdaar–the '***Dramatics Club',*** Kriti – the '***Painting and Art Club',*** Abhinay, ***Eco Club Quiz club and Sports Club. 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".*

Vasavi College of Engineering is selected as part of this scheme and NSTEDB had sanctioned Rs.48.5 lacs to carry out innovative projects by the students. The Project will continue for five years with an annual funding by NSTEDB from 2011.

TEQIP PHASE-II

The college is a participating institution of TEQIP phase-II subcomponent 1.1.(Private Institution)

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 ENGINEERNG (AUTONOMOUS)
ACADEMIC RULES AND REGULATIONS
FOR FOUR YEAR B.E DEGREE PROGRAM
Under Choice Based Credit System (CBCS) w.e.f A.Y.2016-17

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.

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.
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≥ 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 a given 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 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, home work, 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 is to be modularized and SEE questions to be set from each module, with choice if any, to be confined to 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. Normally, syllabi may be reviewed once in four years.
College	:	Means "Vasavi College of Engineering", (Autonomous), Ibrahimbagh, Hyderabad-500031, Telangana State.

Student	:	Means a candidate who has taken admission into B.E undergraduate 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 of Osmania University, Hyderabad and Government of Telangana.

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

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.
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.

2.2 Spot Admission Procedure for B.E. 4-year Program

Any seats left vacant in the convener quota will be filled based on the guidelines given by Convener, TSEAMCET.

Procedure: The College issues an advertisement after necessary approvals. The spot admissions will be made according to the guidelines issued from time to time by convener TSEAMCET.

2.3 Admission to the second year of Four Year B.E Program (Lateral Entry) Program

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.

2.4 Spot Admission Procedure for B.E Lateral Entry

Admission will be made based on the guidelines issued by the Convener, TSECET.

Procedure: The College issues an advertisement after necessary approvals. The spot admissions will be made according to the guidelines issued from time to time by the Convener, TSECET.

3. PROGRAMMES OFFERED

At present college offers six UG Programmes namely Civil, CSE, ECE, EEE, IT and Mechanical Engineering. A student may be offered admission to any one of the programmes of study as per the admission rules. All the programs are offered under semester mode.

4. STRUCTURE OF THE PROGRAMME

4.1 Categorization of Courses

The curriculum of every B.E. Programme is designed to have syllabi consisting of theory and practical courses 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. 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 the 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 (CIE) examinations shall be conducted during the instruction period of the semester. Make up examinations may be conducted for VIII semester immediately after the declaration of main examinations.

5.3 a) Candidates of four-year degree program, who fail to fulfill all the requirements for the award of the degree as specified hereinafter within eight academic years from the time of admission, will forfeit their seat in the course and their admission will stand cancelled.

b) 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 six academic years from the time of admission failing which they will forfeit their seat in the course and their admission will stand cancelled.
Lateral entry students shall also complete the bridge course courses as required. The scheme and other guidelines will be intimated to the students.

6. REGISTRATION OF COURSES

6.1 REGISTRATION OF COURSES

Every admitted student shall be assigned to a Faculty Advisor who shall advice and counsel the student about the details of the academic programme 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 the curriculum of first Semester of study.

6.3 Every student shall enrol for the course 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.

6.4 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.

6.5 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 is allowed to register for courses for which the student has not enrolled, if these are the courses in which the student has failed.

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 obtained all the credits prescribed in the scheme of examination.

7.2 **ATTENDANCE REQUIREMENTS**:

(a) A regular course of study for eligibility to appear at the BE Examination of any semester shall mean putting in attendance of ***not less than 75%*** 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 shall be displayed on the notice board.

(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 ***not exceeding 10%*** 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.

(c) ***A student is allowed to use medical condonation facility only 4 (four) times in the entire period of 8 semesters in the span of 4 years B.E program.***

(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 in the semester examinations 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, in order to become eligible to appear for semester examinations.

7.3 Attendance at 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.

7.4 The attendance shall be calculated from the date of admission into the course.

7.5 The candidates of the First Year, I semester, course 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 college website and 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 and syllabus prescribed for the branch of study approved by the Board of studies (BoS) and in the Academic Council.

8.2 All the courses shall be on the semester pattern.

8.3 The distribution of marks based on the CIE assessment and Semester Examination (SEE) for ***B.E*** program shall be as follows:

Course		Marks	
		CIE	**SEE**
i)	Each theory course	30	70
ii)	Each practical or drawing course	25*	50

8.4 There will be continuous and comprehensive evaluation of students. The distribution of CIEs and semester examination marks for ***B.E program*** are given below:

CIE EXAMS (internals) Theory: **30 Marks**

- **20** Marks each for two internal examinations in a semester and 10 marks for assignments (5marks) and quizzes (5 Marks) etc. together.

- Three quizzes and three assignments will be conducted in a semester each for 5 marks.

- **Average of two tests** will be considered for calculating internal exams marks to which assignment/quiz average marks will be added for obtaining total CIE marks.
- Every student should secure a **minimum of 40% aggregate marks in the internal exams.**

Lab: 25 Marks

15 marks for day-to-day laboratory class work which will be awarded based on the average of all experiments.
- 10 marks for the internal examination.

SEMESTER EXAMS (SEE)

- Semester theory examinations will be conducted for 70 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.

8.5 The semester question paper will be of two parts, 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 50 marks. A student shall answer any five questions. There has to 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.

8.6 The program of instruction, examination and vacations shall be notified by the Principal.

8.7 The semester 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 shall secure a minimum of 40% aggregate marks in the CIE examinations of all the courses put together in any semester to become eligible for appearing semester end exams.*** Those students who fail to secure minimum of 40% aggregate will not be allowed to appear for the semester examinations and he/she has to repeat the said semester by taking readmission in the subsequent academic year.

8.10 A student who secures 'F' grade in ***semester exam and sessional put together*** will be declared failed in that particular semester.

8.11 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). The Branch wise proposed credit distribution is given below

A student is declared eligible to receive the degree on attaining above credits shown against each program of study

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CIVIL	175
CSE	169
ECE	174
EEE	175
IT	172
MECH	180

9. 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

10. CREDITS AND GRADES:	
10.1	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.
10.2	**LETTER GRADES AND GRADE POINTS** 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 followed:

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

10.3	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.
10.4	A student obtaining Grade 'F' shall be considered failed and will be required to reappear in the examination. 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.
10.5	**GRADES: THEORY AND LABORATORY COURSES** The final grades in a semester will be computed based on aggregate marks of CIE and semester 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.
10.6	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.
10.7	**Computation of SGPA and CGPA** Average (SGPA) and Cumulative Grade Point Average (CGPA): A. The SGPA is the ratio of sum of the product of the number of credits with 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. **SGPA** (S_i) = $\Sigma(C_i \times G_i) / \Sigma C_i$ 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. B. The **CGPA** is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e. **CGPA =** $\Sigma(C_i \times S_i) / \Sigma C_i$ where S_i is the SGPA of the i^{th} semester and C_i is the total number of credits in that semester. **C.** The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.
10.8	**CONVERSION OF GRADES INTO PERCENTAGE** Conversion formula for the conversion of GPA into indicative percentage is [CGPA Earned-0.50]x10= % of marks scored. Illustration: [CGPA Earned 7.5 - 0.50]x 10 = 70.5%

11. 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 is allowed to 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

12. ADD AND DROP CREDITS

12.1	A student has to earn the total number of credits specified in the curriculum of the respective program of study in order to be eligible to obtain the degree.
12.2	If the student wishes, the 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 particular semester cannot exceed 28 credits.
12.3	The student has the option to register for additional courses or dropping existing courses from third year first semester onwards.

13. 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	DIVISON AWARDED
7.50 and above (10.00-7.50)	First Division with distinction
6.50 and above but below **7.50**	First Division
5.50 and above but below **6.50**	Second Division
4.50 and above but below **5.50**	Pass division
Otherwise	Fail

14. GENERAL RULES OF EXAMINATION

14.1 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.

14.2 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.

14.3 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 so as 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.

14.4 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.

14.5 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.

14.6 No candidate shall be allowed to appear at examinations for different degrees and different faculties simultaneously.

14.7 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, have to appear at the examinations according to the scheme of examination and syllabus in force.

15. IMPROVEMENT OF DIVISION

15.1 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.

15.2 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.

16. 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.

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 Meda***l 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 Mehdipatnam '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 hyderabd-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
Chilkalguda (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, Mehdipatnam.
2	**Secunderabad (8.30 AM) to VCE** Via. Paradise, Begumpet, Punjagutta, Banjara Hills, Mehdipatnam.
3	**RTC 'x' Roads (VST Bus Stop) to VCE** Via. Sankarmutt, Nallalunta, Barkatpura, Narayanaguda, Himayathnagar, Lakdikapul, Mehdipatnam.
4	**RTC 'x' Roads (VST Bus Stop) to VCE** Via. Sankarmutt, Nallalunta, Barkatpura, Narayanaguda, Old MlA Qtrs, Control Room, Lakdikapul, Mehdipatnam.
5	**Taranaka to VCE** Via. Adikmet, Nallalunta, Narayanaguda, Himayath Nagar, Liberty , Secreteriat, Lakdikapul, Mehdipatnam.
6	**Dilsukhnagar to VCE** Via. Malakpet, Nalgonda 'x' Roads, Koti, Abids, Nampally, Lakdikapul, Mehdipatnam.
7	**Dilsukhnagar to VCE** Via. Malakpet, Nalgonda 'x' Roads, Koti, Abids, Nampally, Lakdikapul, Mehdipatnam.
8	**A.G.Colony (ESI Bus Stop) to VCE** Via. Ameerpet, Punjagutta, Lakdikapul, Mehdipatnam.
9	**A.G.Colony (ESI Bus Stop) to VCE** Via. Ameerpet, Punjagutta, Banjara Hills, Mehdipatnam.

STAFF BUSES (including Senior Students) 2016-17

Route	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**	Pardise, 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.

DEPARTMENTS PROFILES

DEPARTMENT OF CIVIL ENGINEERING

MISSION

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

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.

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 AND 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.

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.

FACULTY

Dr. T. Adilakshmi, Professor and Head of the Department, has 26 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.

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 computers with 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, Infosys, Progress Software, CSC, Merxius Software, Ubergrad, Navaratan Technologies, Innfidects Software Development & Marketing Pvt Ltd. 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-yearB.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.

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."

FACULTY

Dr. K Jaya Sankar is Professor and Head of the Department. The Department has 30 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.

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 15 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

MISSION

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

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 and Control Systems*. The programme ensures that the student effectively 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 members. 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 108 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, Communication and Computer related subjects, the IT curriculum provides an opportunity for the students to have hands-on experience on specific tools MATLAB, Vx Works, VLSI Simulation & Synthesis tools from Mentor Graphics, Xilinx Foundation series, Rational Rose, PSPICE, Microwind and Microprocessors and Microcontroller kits (8085, 8086 & 8051), CPLD/FPGA trainer kits. 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 27 **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, 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 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. Two 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

MISSION

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

Department of Physics was established in 1981.

FACULTY

Dr. A.S. Sai Prasad is professor and Head of the Department. All the 6 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. Two sponsored research project funded by the Atomic Energy Regulatory Board and UGC-MRP are in progress. 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.

DEPARTMENT OF CHEMISTRY

MISSION

To infuse knowledge of chemical principles of engineering materials to the prospective engineers for meeting the challenges in vibrat technology.

The department was established in 1981.

FACULTY

Dr. Ch. Gouri Shankar is the Head of the Department. The department has 8 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.

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

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."

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 Amaralis the Head of the Department. The department has eight faculty members with strong foundations in communications 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 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 LETS DO business connected speech 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 Telangana 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 2016-17

¼ B.E –I SEMESTER

Particulars	Date
Commencement of Instruction	03.08.2016
I Class Test	26-09-2016 to 29-09-2016
II Class Test	23-11-2016 to 26-11-2016
Last date of Instruction	26-11-2016
Preparation holidays & Practical Examinations	28-11-2016 to 09-12-2016
Commencement of Theory Examinations	12-12-2016 to 31-12-2016

¼ B.E –II SEMESTER

Particulars	Date
Commencement of Instruction	02-01-2017
I Class Test	20-02-2017 to 23-02-2017
II Class Test	19-04-2017 to 22-04-2017
Last date of instruction	22-04-2017
Preparation holidays and Practical Examinations	24-04-2017 to 06-05-2017
Commencement of Theory Examinations	08-05-2017 to 31-05-2017
Summer vacation	01-05-2017 to 30-06-2017
Commencement of B.E 2/4-I Semester for the Academic year 2017-2018	10-07-2017

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

Ibrahimbagh, Hyderabad-500 031, Telangana State

SCHEME OF INSTRUCTION AND EXAMINATIONS FOR B.E FIRST YEAR I SEMESTER W.E. F 2016-17

Subject Code	I SEMESTER Subject Name	Instruction Hours per week				Examination			Credits
		L	T	D	P	Duration in Hrs	Max. Marks		
THEORY							SEE	CIE	
HS110EH	English - I	2	1	-	-	3	70	30	2
BS110MA	Engineering Mathematics - I	3	1	-	-	3	70	30	3
BS120PH	Engineering Physics	2	1	-	-	3	70	30	2
BS130CH	Engineering Chemistry	2	1	-	-	3	70	30	2
ES110CS	Computer Programming and Problem Solving using C	3	1	-	-	3	70	30	3
ES120EE ES100CE	Basic Electrical Engineering (CSE, ECE, IT) Basic Engineering Mechanics (Civil, Mech, EEE)	3	1	-	-	3	70	30	3
ES130CE	Engineering Graphics - I	-	2	3	-	3	70	30	4
LABS									
HS111EH	English Language Lab - I	-	-	-	2	3	50	25	1
BS111PH	Engineering Physics Lab	-	-	-	2	3	50	25	1
BS121CH	Engineering Chemistry Lab	-	-	-	2	3	50	25	1
ES111CS	Computer Programming & Problem Solving using C Lab	-	-	-	2	3	50	25	1
ES121ME	Engineering Workshop- I	-	-	-	2	3	50	25	1
	Total	**15**	**8**	**3**	**10**		740	335	**24**
		36					**1075**		

* SEE- Semester End Examination * CIE- Continuous Internal Evaluation

w.e.f the academic year 2016-17

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

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

SYLLABUS FOR B.E 1/4 - FIRST SEMESTER

ENGLISH-I

(Common to all branches)

Sub Ref Code: HS110EH	Credits: 02	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 2+1 hrs

Courese Objectives	Courese Outcomes
The course will enable the learners to: • 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 tex	***At the end of the course the learners should be able to***: • Greet friends, teachers, strangers appropriately • Introduce themselves and participate in day-to- day conversations • Listen to lectures, talks and take notes • Use language functionally and participate in classroom interactions • Read with concentration and grasp the meaning of a text • Write with minimum errors class-notes and answers to questions

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-**Short-stories:**

The Road Not Taken - Robert Frost

The Eyes Are Not Here - Ruskin Bond

SUGGESTED BOOKS:

1. Meenakshi Raman and Sangeeta Sharma, Technical communication - Principles and Practice, Oxford University Press, 2nd Edition, 2014
2. E. Suresh Kumar, P. Sreehari and J. Savithri - Essential English
3. Nuttal.J.C Reading comprehension - 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.

w.e.f the academic year 2016-17

SYLLABUS FOR B.E 1/4 - FIRST SEMESTER

ENGLISH LANGUAGE LAB-I

(Common to all branches)

Sub Ref Code: HS111EH	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	SEE:50 Marks	Instruction: 2hrs

Courese Objectives	Courese Outcomes
The course will enable the learners to: • 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 tex	***At the end of the course the learners should be able to***: • Greet friends, teachers, strangers appropriately • Introduce themselves and participate in day-to- day conversations • Listen to lectures, talks and take notes • Use language functionally and participate in classroom interactions • Read with concentration and grasp the meaning of a text • Write with minimum errors class-notes and answers to questions

PHONETICS LAB:

Introduction to English Phonetics: Introduction to auditory, acoustic and articulatory phonetics. Organs of speech: the respiratory, articulatory and phonatory systems. Classification and Description of English Phonemic sounds; Minimal pairs: The Syllable: Types of syllables; Consonant clusters.

INTERACTIVE COMMUNICATION SKILLS LAB:

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, types of delivery, 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:

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, Reading Newspapers, Magazines, Short–Stories, One-act plays, Content - related texts and making notes.

SUGGESTED BOOKS:

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

w.e.f the academic year 2016-17

SYLLABUS FOR B.E 1/4 - FIRST SEMESTER

ENGINEERING MATHEMATICS-I

(Common to all branches)

Sub Ref Code:BS110MA	Credits: 03	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 3+1 hrs

Course Objectives	Course Outcomes
The course will enable the students to:	***At the end of the course students should be able to:***
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.	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: Differential Calculus (12 Hours)

Introduction to mean vlue theorems with geometrical interpretation**.** Taylor's Series – Expansion of functions on power series- Curvature- Radius of Curvature (Cartesian, Polar and Parametric co-ordinates) – Center of Curvature –Evolutes - Envelopes.

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

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: Multiple integrals (10 Hours)

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

UNIT – IV: Vector Calculus (14 Hours)

Scalars and Vector Fields-Vector Differentiation-Level Surfaces-Gradient of a Scalar field- 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: Infinite Series (8 Hours)

Sequences- Series – Convergence and Divergence- Series of positive terms-Geometric series, p-series- 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.
3. Erwin Kreyszig, Advanced Engineering Mathematics, 8th Ed, John Wiley & Sons.
4. Shanti Narayan, Differential Calculus, S. Chand & Co
5. A R Vasishtha, Matrices, Krishna Prakashan Media, Meerut

SYLLABUS FOR B.E 1/4 - FIRST SEMESTER

ENGINEERING PHYSICS

(Common to all branches)

Sub Ref Code: BS120PH	Credits: 02	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 2+1 hrs

Course objectives	*Course outcomes*
Students will be able to	***At the end of the course students will be able to***
• Learn fundamentals in optics and apply in engineering fields • Explain the construction and working of various lasers systems • Tell the working of optical communication system • Solve simple mathematical formulations for Harmonic Oscillators • List various magnetic and dielectrics materials for engineering applications.	• Use principles of interference, diffraction, polarization to explain various optical phenomena. • Ascertain selection of laser systems for practical applications. • Appreciate optical communication system • Solve solutions under different situation of a damped and forced oscillations. • Differentiate properties, characteristics and applications of various magnetic and dielectric materials.

UNIT- I *Fundamentals of vibrations*: (8 hours)

- Free, Damped and Forced Harmonic Oscillators - equation of motion and their solutions. Under damping, Over damping and critical damping conditions.
- Logarithmic decrement, Relaxation time, amplitude and velocity resonance, sharpness, bandwidth, Q-factor.
- Superposition of two mutually perpendicular simple harmonic vibrations of same frequency, Lissajous figures.

UNIT- II PHYSICAL OPTICS (10 Hours)

- Conditions for Interference, interference in thin films, Newton's rings (reflected light) -measurement of wavelength of a light source and refractive index of a liquid.
- Types of diffraction, diffraction due to a single slit, double slit and diffraction grating (Qualitative), measurement of wavelength of a light source.
- Polarization of light, Malus Law–double Refraction-Nicol's prism, wave plates, optical activity, Laurent's half shade polarimeter, determination of specific rotation.

UNIT - III INTRODUCTION TO FIBRE OPTICS (8 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, bending losses, signal distortion. Merits and demerits of optical fiber, applications of optical fiber, overview of optical fiber communication system

UNIT-IV – LASERS (09Hours)

- Characteristics of Lasers, induced absorption, spontaneous and stimulated emission of radiation - Einstein Coefficients A and B, meta stable state, Population inversion.
- Solid state lasers: Nd-YAG laser and Semiconductor laser, Gas Laser: Helium-Neon Laser, Applications of lasers in engineering (drilling, welding, CD writing, medicine), laser safety.
- Basic principles of holography– Construction and reconstruction of image on hologram – advantages of Holography-Applications of holography.

UNIT - V Dielectric and Magnetic Materials (7 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 $BaTio_3$, Piezo and ferroelectric materials.
- Ferro, antiferro and ferrimagnetic materials, Weiss molecular field theory of ferromagnetism- magnetic domains- hysteresis curve -Soft and hard magnetic Materials-Ferrites fundamentals

SUGGESTED BOOKS:

1. Jewett Serway, Physics for scientists and engineers, 8th Ed, Cengage learning Publication, 2010
2. David Halliday, Robert Resnick and Walker, Principles of Physics Extended, 10th Ed, Wiley Eastern limited, 2014
3. John M Senior, Optical Fiber Communication: Principles and Practice, 3rd Ed, PHI, 2009
4. Avadhanulu and Kshira Sagar, *Textbook of Engineering Physics: Revised Edition, S. Chand, 2014*
5. Neeraj Mehta, Applied Physics for Engineers, PHI,2011
6. S.L Gupta and Sanjeev Gupta, Modern Engineering Physics, 1stEd, Dhapat Rai publications, 2011
7. A. Armugam, Materials Science, Anuradha Publications, 1995

ONLINE RESOURCES:

1. http://ocw.mit.edu/courses/physics
2. http://oyc.yale.edu/physics
3. www.nptel.ac.in

SYLLABUS FOR B.E 1/4 - FIRST SEMESTER
ENGINEERING PHYSICS LABORATORY
(Common to all branches)

Sub Ref Code: BS111PH	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	SEE:50 Marks	Instruction: 2 hrs

Course Objectives	Course Outcomes
Students are able to	***The students acquire the ability to***
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.	1. Conduct experiments, take measurements. 2. Write appropriate laboratory reports. 3. Compute and compare the experimental results and draw relevant conclusions. 4. Use the graphical representation of data and estimation through graphs.

LIST OF EXPERIMENTS

1. Estimation of errors using Gaussian distribution in simple pendulum and to calculate the probable error and 'g'.
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. Study of characteristics of Thermistor and to evaluate its constants.
5. Determination of rigidity modulus of a given material of wire by Torsional Pendulum.
6. Determination of radius of curvature of a given Plano-convex lens by forming Newton's Rings.
7. Determination of wavelength of spectral lines of Mercury light source using Diffraction grating under normal incidence.
8. Determination of wavelength of given Semiconductor Laser by diffraction.
9. Verification of Malus law in polarization.
10. Calculation of Numerical aperture, acceptance angle and Power loss due to bending of an Optical Fiber & to study Power Loss.
11. Determination of frequency of ac signal using CRO

**** At least Eight experiments should be done by the student in each semester***.

SUGGESTED BOOKS:

1. Raj Kumar, Udit Narain and PK Yadav, Advanced Physics Laboraotary Mannual, Kedarnath Ramnath Publication, 2005

SYLLABUS FOR B.E 1/4 - FIRST SEMESTER

ENGINEERING CHEMISTRY

(Common to all branches)

Sub Ref Code: BS130CH	Credits: 02	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 2+1 hrs

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course students should be able to:**
1. Describe the requirements of water for domestic and industrial uses. 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. Enrich with the concepts of corrosion and factors 5. Get acquainted with various corrosion control methods.	1. Select suitable method of water treatment for specific purpose 2. Choose the appropriate polymer as per requirement 3. Suggest the better fuels for required output. 4. Identify the type and gravity of corrosion. 5. Suggest& adapt suitable corrosion control methods

UNIT-I: Water Chemistry

Hardness of water- types and its units (PPM, Clarke Degree & Degree French). Degree of hardness-Numericals. Determination of hardness of water by EDTA method -Numericals. Alkalinity of water and its determination-Numericals. Effects of hardness in boilers- scales, sludge, causes and their prevention by Calgon & blow down processes Softening of water by Reverse Osmosis. Specifications of Potable water. Water treatment for drinking purpose- Coagulation, Sedimentation, Filtration, Sterilization by a) Chlorination- Break Point Chlorination b) Ozonolysis.

UNIT-II: Polymers

Definition, 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. Types of Polymerisation - Addition and Condensation polymerization.

Plastics: Preparation, properties and uses of A) Aramid, B) Bakelite C) Polymethylmetha-acrylate (PMMA) and D) Polycarbonate

Elastomers: Natural rubber- Structure – Vulcanization and merits.

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

Biodegradable polymers: Introduction and advantages. Polylactic acid-Preparation and applications.

UNIT-III: Chemical Fuels

Introduction, classification, requisites of a good fuel. Advantages and disadvantages of solid, liquid & gaseous fuels. Calorific value (CV)-HCV, LCV (Definition and relationship), Dulongs formula-Numericals.

Solid Fuels: Proximate & Ultimate analysis of coal and their significance. Chemistry of combustion-Numericals by volume- weight and weight-weight method.

Liquid Fuels: Composition and CV of Gasoline, 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. Catalytic converters and their role in reducing the toxicity of exhaust emissions, Power alcohol,

Diesel-composition, CV, Cetane number.

Gaseous Fuels: Composition and applications of CNG, LPG.

Bio-diesel: Source and chemistry of Transesterification.

UNIT-IV: Corrosion Science

Concept, Definition, Gravity of Corrosion-Types of corrosion (Dry & Wet), Pilling – Bed worth rule, effect of nature of oxide layer on rate of dry corrosion. Mechanism of electro chemical (wet) corrosion. Formation of anodic and cathodic areas-Differential aeration corrosion (Pitting, Water line & Crevice corrosion) and Galvanic corrosion - Galvanic series.

Factors influencing corrosion

a. Nature of metal: 1. Relative position of metal in galvanic series. 2. Over Voltage 3. Relative areas of anode & cathode 4. Nature of corrosion product.

b. Nature of environment: 1. Temperature 2. P^H 3. Humidity.

UNIT-V: Corrosion Control methods

A) Corrosion Inhibitors- Anodic and cathodic inhibitors.

B) Protective coatings i) Organic coatings- Paint-its constituents and their functions.

ii) Metallic Coatings (Anodic & Cathodic), Methods of application of metallic coatings-Hot dipping (Galvanization process), Principle of Electro plating & Electroless plating and their differences. Electroplating (Cu coating on Fe), Electroless plating (Ni coating on Insulators)

C) Cathodic protection, Sacrificial Anodic Protection (SAP), Impressed Current Cathodic Protection (ICCP).

Learning resources:

1. PC Jain, M Jain Engineering Chemistry, Dhanapathi Rai & Sons, 16th ed, New Delhi.
2. Sashi Chawla, Text book of Engineering Chemistry, Dhanapathi Rai &sons, New Delhi.

3. O.G. PALANNA, Engineering Chemistry, TMH Edition.
4. JC Kuriacose and J Rajaram, Chemistry in Engineering and Technology TMH, New Delhi.
5. SS Dara, S Chand &sons, Engineering Chemistry, New Delhi.
6. Puri, Sharma and Pathania Principles of physical chemistry, Vishal Publishing Co.
7. PL Soni and op Dharmarha, S Chand &sons, Text book of PhysicalChemistry, New Delhi.
8. S. Glasstone and D Lewis, Elements of Physical Chemistry.
9. Fred W. Billmeyer Jr., Textbook of Polymer Science.
10. Shikha Agarwal, Engineering Chemistry, Cambridge University Press, 2015.

w.e.f the academic year 2016-17

SYLLABUS FOR B.E 1/4 - FIRST SEMESTER

ENGINEERING CHEMISTRY LAB

(Common to all branches)

Sub Ref Code: BS121CH	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	SEE:50 Marks	Instruction: 2 hrs

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course students are be able to:**
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	1. Analyze the given substance using conventional and instrumental volumetric techniques 2. Estimate the substances by Conductometry and colorimetry 3. Evaluate the data from the practical observations 4. Prepare urea- formaldehyde and nylon 6,6 polymers 5. Calculate the percentage of error of the results obtained

LIST OF EXPERIMENTS

1. Introduction to Volumetric / Instrumentation analysis and safety precautions.
2. Standardization of $KMnO_4$ / NaOH

Permanganometry

3. Estimation of Ferrous iron by $KMnO_4$

Complexometry

4. Estimation of hardness of Water
5. Estimation of Calcium in Milk

Acidimetry

6. Estimation of Carbonate and bicarbonate alkalinity of Water

Conductometry

7. Measurement of Conductance and determination of concentration of given electrolyte
8. Measurement of Conductance and determination of concentration of electrolytes in the given mixture.

Colorimetry

9. Verification of Beer- Lamberts law.
10. Determination of concentration of Cu
11. Estimation of Fluoride in a water sample

Demo

11. Preparation of Phenol Formaldehyde resin /Urea formaldehyde / Nylon 6,6
12. Identification of Anode and Cathode in Corrosion of iron/steel.

A Student should perform atleast 8 experiments

SUGGESTED BOOKS:

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

SYLLABUS FOR B.E 1/4 - FIRST SEMESTER

COMPUTER PROGRAMMING AND PROBLEM SOLVING USING C

(Common to all branches)

Sub Ref Code: ES110CS	Credits: 03	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 3+1 hrs

Course Objectives	Course Outcomes
Students should be able to	Students will be able to
• acquire problem solving skills. • develop flow charts. • understand structured. programming concepts. • write programs in C Language.	1. draw flowcharts and write algorithms for solving a problem and choose appropriate data type for writing programs in C language 2. design modular programs involving input output operations, decision making and looping constructs 3. use arrays for storing, sorting and searching data 4. apply the concept of pointers for dynamic memory management, string handling and arrays 5. design programs to store data in structures and files

UNIT-I (10 Hours)

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 (11 Hours)

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 (11 Hours)

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 (11 Hours)

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 (11 Hours)

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. B. A. Forouzan & Richard F. Gilberg, "A Structured Programming Approach using C", 3rd Edition, Cengage Learning, 2013.
2. Brian W. Kernighan and Dennis M. Ritchie, "The C Programming Language", 2nd Edition, Prentice-Hall, 2006.
3. Rajaraman V, "The Fundamentals of Computer", 4th Edition, Prentice-Hall of India, 2006.
4. Steve Oualline, "Practical C Programming", 3rd Edition, O'Reilly Press.
5. Jeri R. Hanly, Elliot B. Koffman, "Problem Solving and Program Design in C", 5th Edition, Pearson Education, 2007.
6. E. Balagurusamy, "Programming in ANSI C", 4th Edition, TMG, 2008.
7. Gottfried, "Programming with C", 3rd Ed, TMH, 2010.
8. R G Dromey, "How to Solve it by Computer", 1st Edition, Pearson Education, 2006.

SYLLABI FOR B.E 1/4 - FIRST SEMESTER
COMPUTER PROGRAMMING AND PROBLEM SOLVING USING C LAB
(Common to all branches)

Sub Ref Code: ES111CS	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25 Marks	SEE:50 Marks	Instruction: 2 hrs

COURSE OBJECTIVES
Students should be able to
- understand the fundamentals of programming in C Language
- write, compile and debug programs in C
- formulate problems and implement in C
- effectively choose programming components to solve computing problems

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:
1. B. A. Forouzan & Richard F. Gilberg, "A Structured Programming Approach using C", 3rd Edition, Cengage Learning, 2013.
2. Brian W. Kernighan and Dennis M. Ritchie, "The C Programming Language", 2nd Edition, Prentice-Hall, 2006.
3. E. Balagurusamy, "Programming in ANSI C", 4th Edition, TMG, 2008.

SYLLABUS FOR B.E 1/4 - FIRST SEMESTER

BASIC ENGINEERING MECHANICS

(**Common to Civil, Mechanical and EEE Branches**)

Sub Ref Code: ES100CE	Credits: 03	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 3+1 hrs

Course objectives	Course outcomes
1. To **learn** the resolution of a system of forces (coplanar, spatial, concurrent, non-concurrent) and compute their resultant. 2. To **compute** unknown forces by considering equilibrium of a body. 3. To **analyze** plane trusses of various configurations. 4. To **perform** analysis of bodies lying on rough surfaces. 5. To **locate** the centroid of a body and also compute the area moment of inertia of standard and composite sections.	***At the end of the course, students will be able to:*** 1. **Judge** whether the body under the action of planar or spatial force system is at rest or in motion. 2. **Analyse** equilibrium of a body subjected to a system of forces. 3. **Find** forces in the members of a given plane truss. 4. **Solve** problem of bodies subjected to friction. 5. **Locate** centroid and compute moment of inertia and polar moment of inertia of a given section.

UNIT – I: Force Systems (10 periods)

Resultant of coplanar concurrent forces, Components of force in space, Moment of force and its applications, Couples and resultant of force systems.

UNIT – II: Equilibrium of Force Systems (12 periods)

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

UNIT– III: Analysis of Structures (10 periods)

Analysis of trusses by method of joints and method of sections for plane trusses like Warren girder Pratt, truss, Fink truss etc.

UNIT –IV: Friction (12 periods)

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

UNIT – V: Centroid and Moment of Inertia (16 periods)

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 1994.
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.
4. Beer F.P & Johnston E.R "Jr. Vector Mechanics for Engineers", TMH, 2004.
5. Hibbeler R.C & Ashok Gupta, "Engineering Mechanics", Pearson Education, 2010.
6. Tayal A.K., "Engineering Mechanics – Statics & Dynamics", Umesh Publications, 2011.
7. Basudeb Bhattacharyya., "Engineering Mechanics", Oxford University Press, 2008.
8. Meriam. J. L., "Engineering Mechanics", Volume-I Statics, John Wiley & Sons, 2008.

ONLINE RESOURCES:

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

w.e.f the academic year 2016-17

SYLLABUS FOR B.E 1/4 - FIRST SEMESTER
(w.e.f the academic year 2015-16)

ENGINEERING GRAPHICS-I

(Common to all branches)

Sub Ref Code: ES130CE	Credits: 04	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 3+2 hrs

Course Objectives	Course Outcomes
1. To **impart** skills of drawing instruments and their use to convey exact and complete information of any object. 2. To **explore** various scales in Engineering practice 3. To **Construct engineering** curves. 4. To **Prepare** orthographic projections of points, lines, planes and solids	**At the end of the course students are able to:** 1. **Develops** 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 orthrographic projection of points, lines, planes and solids.

UNIT-I: (16 Periods)

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 (16 Periods)
Ellipse, Parabola, Hyperbola, Cycloid, Epicycloid, Hypocycloid and Involute.

UNIT-III: Projections of points and straight lines (16 Periods)
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 (8 Periods)**
Projection of perpendicular planes, Oblique planes, Traces of planes, use of Auxiliary plane method.

UNIT-V: **Projection of solids (14 Periods)**
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.

SUGGESTED BOOKS:

1. Bhatt N.D. "Elementary Engineering Drawing", Charotar Publishers, 2014.
2. Thomas E French, Charles J Vierck, Robert J. Foster "Engineering Drawing and Graphic Technology", McGraw Hill Education, 1993.
3. Gill P.S. "Engineering Drawing: Geometrical Drawing", SK Kataria & sons,2012.
4. Venugopal.K "Engineering Drawing and Graphics + Autocad", New Age International (P) Ltd.,New Delhi, 1998.
5. Siddiquee A.N "Engineering Drawing with a Primer on Autocad", Prentice hall of India Ltd.,New Delhi, 2004.
6. Basanth Agrawal, Agrawal C.M "Engineering Graphics" First Edition, Tata McGraw Hill, 2012
7. BVR Gupta, M Raja Roy, "Engineering Drawing with AutoCad", IK Int Pvt Ltd, 2009

ONLINE RESOURCES:

1. NPTEL virtual lab (www.nptel.ac.in)

SYLLABUS OF B.E 1/4 –FIRST SEMESTER
BASIC ELECTRICAL ENGINEERING
(Common to CSE, ECE & IT Branches)

Sub Ref Code: ES120EE	Credits: 03	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 3+1 hrs

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course students should be able**
1. provide basics in electrical engineering 2. analyze various electrical machines 3. learn basic knowledge of power generation.	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 (11 hours)

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 (12 hours)

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 (11 hours)

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 motors, Applications.

UNIT – IV (11 hours)

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 (10 hours)

Power Generation: Basic ideas 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 BOOKS:

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

ONLINE RESOURCES

1. www.electrical4u.com
2. www.faadooengineers.com
3. www.nptel.ac.in
4. www.oupinheonline.com
5. www.cosmolearning.com

SYLLABI FOR B.E 1/4 - FIRST SEMESTER
ENGINEERING WORKSHOP-I

(Common to all branches)

Sub Ref Code: ES121ME	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	SEE:50 Marks	Instruction: 2 hrs

Course Objectives	Course Outcomes
The course will enable the students to:	**At the end of the course students should be**
1. Know basic workshop processes be able to Read and interpret job drawings 2. Adopt safety practices while working with various tools 3. Identify, select and use various marking, measuring, holding, striking and cutting tools & equipments. 4. Practice the correct use of hand tools 5. Manufacture items within tolerance and inspect the job for specified dimensions	1. Demonstrate an understanding of and comply with workshop safety regulations. 2. Identify and use marking tools, measuring equipment and to work to prescribed accuracies. 3. Undertake jobs connected with Mechanical Engg.viz. fitting, carpentry and sheet metal. 4. Apply basic Electrical Engineering knowledge for house wiring practice.

FITTING	1. Template fitting (square fit) 2. V- groove fit 3. Drilling and Tapping 4. Assembly of pully on a shaft with key (demo)
HOUSE WIRING	1.Two lamps in (a)series (b) parallel with 3 pin plug and switches 2.Staircase wiring 3.Tube light wiring 4.LT distribution panel with loads (demo)
CARPENTRY	1. Half-lap joint 2. Dove-tail joint 3.Briddle joint 4.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)

SUGGESTED BOOKS:

1. *P. Kannaiah & K. L. Narayana,* Workshop manual, Scitech publications (I) Pvt. Ltd, 2 Ed. 2009
2. *K. Venugopal, Dr. V. Prabhu Raja, G. Sreekanjana,* Workshop Manual, Anuradha Publications 1st Ed. 2012

ONLINE RESOURCES:

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

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

Ibrahimbagh, Hyderabad-500 031, Telangana State

SCHEME OF INSTRUCTION AND EXAMINATIONS FOR B.E FIRST YEAR II SEMESTER W.E. F 2016-17

Subject Ref Code	II SEMESTER	Instruction Hours per week				Examination			Credits
	Subject Name	L	T	D	P	Duration in Hrs	Max. Marks		
THEORY							**SEE**	**CIE**	
HS210EH	English – II	2	1	-	-	3	70	30	2
BS210MA	Engineering Mathematics - II	3	1	-	-	3	70	30	3
BS220PH	Applied Physics (CSE, ECE, EEE, IT, Mech)	2	1	-	-	3	70	30	2
BS230PH	Applied Physics (CIVIL)								
BS240CH	Applied Chemistry (CSE, ECE, IT)	2	1	-	-	3	70	30	2
BS250CH	Applied Chemistry (CIVIL, EEE, Mech)								
ES210CS	Object Oriented Programming using C++	3	1	-	-	3	70	30	3
ES100CE	Basic Engineering Mechanics (CSE, ECE, IT)	3	1	-	-	3	70	30	3
ES220CE	Engineering Mechanics (Civil, Mech, EEE)								
ES230CE	Engineering Graphics - II		2	3	-	3	70	30	4
LABS									
HS211EH	English Language Lab - II	-	-	-	2	3	50	25	1
BS211PH	Applied Physics Lab	-	-	-	2	3	50	25	1
BS221CH	Applied Chemistry Lab	-	-	-	2	3	50	25	1
ES211CS	Object Oriented Programming using C++ Lab	-	-	-	2	3	50	25	1
ES221ME	Engineering Workshop-II (Civil, Mech, EEE)	-	-	-	2	3	50	25	1
ES231EE	Basic Electrical Engineering Lab (For ECE)								
ES241CS	CSE workshop (CSE)								
ES251IT	IT Workshop (IT)								
	Total	**15**	**8**	**3**	**10**		**740**	**335**	**24**
		36					**1075**		

w.e.f the academic year 2016-17

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

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

SYLLABUS OF B.E 1/4 –II SEMESTER

ENGLISH -II

(Common to all branches)

Sub Ref Code: HS210EH	Credits: 02	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 2+1 hrs

Course	Course Outcomes
The course will enable the	**At the end of the course students should be**
• 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.	• 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; Styles of Communication; Persuasion techniques; Team building skills and team work.

UNIT – II:

Oral communication; Importance 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; Concord; Relative clauses; Vocabulary: Polysemes, Hyponyms, One- word Substitutes; Phrasal verbs, Collocations, multi-word expressions, Idiomatic usage.

UNIT – V :
Reading Texts
Short-stories:
Goodbye Party for Miss Pushpa T.S Nissim Ezekiel.
The Romance of a Busy Broker- O. Henry

SUGGESTED BOOKS:

1. Meenakshi Raman and Sangeeta Sharma, Technical communication-Principles and Practice, 2nd Ed, Oxford University Press, 2014.
2. E.Suresh Kumar, P. Sreehari, J. Savithri, Essential English, Orient Blackswan 2011.
3. A.K Ramchandran et al., Business communication, Macmillan, 2009.
4. Sunitha Mishra, C. Murali Krishna., Communication Skills for Engineers, Pearson, 2004.
5. Monipally Mathew, Craft of Business Writing, Tata McGraw Hill.
6. Allen and Waters. How English Works?
7. Grillet. F., Developing Reading Comprehension

w.e.f the academic year 2016-17

SYLLABUS OF B.E 1/4 –II SEMESTER
ENGLISH LANGUAGE LABORATORY-II
(Common to all branches)

Sub Ref Code: HS211EH	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	SEE:50 Marks	Instruction: 2 hrs

Interactive Communication Skills Lab (Advanced Level):
Debate: Essentials of debate, conducting oneself in a debate, moderating a debate, concluding a debate.
Group discussion: Discussions of cases.
Presentation Skills: Making Effective Presentations, Expressions which can be used in Presentations, Use of Non-Verbal Communication, Handling Question and Answer Session; Use of Audio-Visual Aids, Team PowerPoint Presentations.
Audio and Videos, News Clippings and Live Matches: - To Develop LS, Commentaries, and Dialogue Delivery.

Reading Skills Lab:
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 reviews, note-making from different texts.
Reading: - Reading different types of texts and analyzing the different registers, technical journals, Magazines, Short–Stories.

SUGGESTED BOOKS:

1. Jayshree Mohanraj, Kandula Nirupa Rani and Indira Babbellapati, Speak Well, Orient BlackSwan.
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. Authentic texts like magazines, journals and short-stories

SYLLABUS OF B.E 1/4 –SECOND SEMESTER

ENGINEERING MATHEMATICS-II

(Common to all branches)

Sub Ref Code: BS210MA	Credits: 03	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 3+1 hrs

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the students to:	***At the end of the course students should be able to:***
1. Study the concepts of matrices, Eigen values and Eigen vectors, Diagonalization and canonical form of a quadratic form. 2. Solve various first order differential equations using various elementary techniques and learn its applications. 3. Solve various Higher order homogeneous and non-homogeneous differential equations with constant and variable coefficients and applications. 4. Learn the concepts of Ordinary and Singular points of an equation, Power series solution method and about the Legendre's Differential Equation. 5. 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.	1. Find rank of a given matrix, solve system of linear 2. equations, diagonalize a given matrix and reduce a quadratic form to canonical form and solve problems based on numerical methods. 3. Identify the differential equations and solve them, model the real time electrical engineering problems viz., LR and RC Circuits into differential equations and solve. 4. 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. 5. Solve the differential equations using power series 6. solution method and solve the special differential 7. equation i.e., Legendre's Differential Equation. 8. 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 Hours)

Rank of a Matrix- Linearly independence and dependence of Vectors - Eigenvalues 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 Hours)

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 Hours)

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 Hours)

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 Hours)

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 ed, Narosa Publishing House.
2. Dr. B.S Grewal, Higher Engineering Mathematics 40th ed, Khanna Publishers.
3. Wylie & Barrett, Advanced Engineering Mathematics, Tata Mc Graw Hill, New Delhi.
4. Erwin Kreyszig, Advanced Engineering Mathematics, 8th ed, John Wiley & Sons, Inc.
5. M.D.Raisinghania, Ordinary and Partial Differential equations, S.Chand & Company Ltd.,1997.
6. N. Bali, M. Goyal, C. Watkins, Firewall, Advanced Engineering Mathematics, New Delhi.

SYLLABUS OF B.E 1/4 –II SEMESTER
APPLIED PHYSICS
(Common to CSE, ECE, EEE, IT and Mechanical Branches)

Sub Ref Code: BS220PH	Credits: 02	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 2+1 hrs

Course objectives	*Course outcomes*
Students will be able	***At the end of the course students will be able to***
1. Know the structures and defects in crystal	1. Ascertain the selection of materials by structure and defects
2. Learn classification of solids using band theory	2. Differentiate types of solids and their applications
3. Explain the characteristics of diodes	3. Analyze characteristics of diode and its uses
4. Gain knowledge on ac fundamentals and basics of electromagnetic theory	4. Inquire LCR circuits and derive EM equations for various media.
5. Appreciate transformation and wave mechanics.	5. Correlate inertial and non-inertial frames and derive Eigen values for quantum mechanical systems.

UNIT- I MODERN PHSICS (8 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.
- 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-II CRYSTALLOGRAPHY & SUPERCONDUCTIVITY (10 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, line defects: screw and edge dislocations, concentration of Schottky and Frankel defects in a crystal.
- **Superconductivity:** Superconductivity -General properties of super conductors – Meissner effect. Type I and Type II superconductors - BCS Theory (in brief)–Cooper pairs- high T_c superconductors (1-2-3 type)- Josephson's Junction –SQUIDS- Applications of superconductors

UNIT- III BAND THEORY OF SEMICONDUCTORS (6 Hours)

- Qualitative concepts on Free electron theory and Kronig-Penny model - Classification of solids as conductors, insulators and semiconductors based on band theory.
- Types of semiconductors: intrinsic and extrinsic, Carrier concentration in intrinsic semiconductors and its conductivity - Fermi energy.

UNIT-IV PHYSICS OF PN JUNCTION DIODE (9 Hours)

- Drift and diffusion currents, mobility, equation of continuity, Hall Effect.
- Formation of PN junction - V-I Characteristics of PN Junction diode and their temperature dependence
- Construction and working of LED, solar cell and photodiode, Construction and working of Half Wave, Full Wave and Bridge Rectifier - Efficiency and Ripple Factor
- Characteristics of Zener diode - Working of Simple Zener Voltage Regulator.

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

- **AC Circuits**: Basic Definitions of RMS and average values of a.c voltage, reactance and impendence, AC through pure resistor, capacitor and inductor, AC through RC, RL and CL circuits, 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

SUGGESTED BOOKS:

1. C. Kittel, *Introduction to Solid State Physics, 8th Ed,* Wiley Eastern, 2005
2. S.O. Pillai, Solid State Physics, *New Age International publishers, 7th Ed 2015*
3. *SM Sze Physics of Semiconductor Devices, Wiley Publication, 3rd ed, 2007*
4. *BL Theraja and AK Theraja A text book of electrical Technology Volume-I, S Chand, 2013*
5. Robert Resinick Introduction to special Relativity, John Wiley, 2003
6. S.L Gupta and Sanjeev Gupta A text book of Engineering Physics, Dhanpath Rai Pub., Revised Ed, 2014
7. Neeraj Mehta, Applied Physics for Engineers, PHI Learning Pvt, 2013

ONLINE RESOURCES

1. http://ocw.mit.edu/courses/physics
2. http://oyc.yale.edu/physics
3. www.nptel.ac.in

SYLLABUS OF B.E 1/4 –II SEMESTER

APPLIED PHYSICS

(only to CIVIL Engineering Branch)

Sub Ref Code: BS230PH	Credits: 02	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 2+1 hrs

Course objectives	*Course outcomes*
Students will be able to	***At the end of the course students will be able to***
1. Know the structures and defects in crystal	1. Ascertain the selection of materials by structure and defects
2. Learn classification of solids using band theory	2. Differentiate types of solids and their applications
3. Discover use of acoustic waves in engineering	3. Investigate acoustic characteristics of a building
4. Gain knowledge on ac fundamentals	4. Inquire use of LCR circuits.
5. Realize applications of statistical and wave mechanics.	5. Apply statistical and quantum mechanical equations.

UNIT- I FUNDAMENTALS OF STATISTICAL AND QUANTUM MECHANICS (8 Hours)

- ***Statistical Mechanics:*** Concept of phase space-types of ensembles-micro canonical-canonical and grand canonical ensembles-qualitative treatment of Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac Statistics

- ***Quantum Mechanics***: 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.

UNIT-II CRYSTALLOGRAPHY & SUPERCONDUCTIVITY (10 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, line defects: screw and edge dislocations, concentration of Schottky and Frankel defects in a crystal.

- **Superconductivity**: Superconductivity -General properties of super conductors – Meissner effect. Type I and Type II superconductors - BCS Theory (in brief)–Cooper pairs- high T_c superconductors (1-2-3 type)-Josephson's Junction –SQUIDS- Applications of superconductors.

UNIT- III BAND THEORY OF SEMICONDUCTORS (7 Hours)

- Qualitative concepts on Free electron theory and Kronig-Penny model - Classification of solids as conductors, insulators and semiconductors based on band theory.
- intrinsic and extrinsic semiconductors -Conductivity of semiconductors - Fermi energy, Formation of PN junction, V-I Characteristics of PN Junction diode

UNIT– IV AC CIRCUITS (7 Hours)

- Basic Definitions: RMS, Average values of AC voltage, Reactance and Impendence, AC through pure resistor, capacitor and inductor
- AC through RC, RL and CL circuits, Series and parallel LCR resonance circuits, band width, sharpness, and electromechanical analogy.

UNIT- V ULTRASONICS (10 Hours)

- ***Ultrasonic*** waves and their properties, Production of ultrasonics by Piezo-electric and magnetostriction methods, Detection of ultrasonics, Wavelength of ultrasonic waves -Engineering applications of ultrasonics-SONAR-Non-destructive testing-ultrasound cleaning (cavitation)-Seismography (concepts only)
- ***Acoustics*****:** Intensity of sound-intensity level-reverberation-reverberation time -Sabine's formula-Remedies to reverberation-sound absorbent materials-Conditions for good acoustics of a building-Acoustic quieting: effects and remedies

SUGGESTED BOOKS:

1. C. Kittel, *Introduction to Solid State Physics, 8th Ed,* Wiley Eastern, 2005
2. S.O. Pillai, Solid State Physics, *New Age International publishers, 7th Ed 2015*
3. *SM Sze Physics of Semiconductor Devices, Wiley Publication, 3rd ed, 2007*
4. *BL Theraja and AK Theraja A text book of electrical Technology Volume-I, S Chand, 2013*
5. Robert Resinick Introduction to special Relativity, John Wiley, 2003
6. S.L Gupta and Sanjeev Gupta A text book of Engineering Physics, Dhanpath Rai Pub., Revised Ed, 2014
7. Neeraj Mehta, Applied Physics for Engineers, PHI Learning Pvt, 2013

ONLINE RESOURCES

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

SYLLABUS OF B.E 1/4 –II SEMESTER
APPLIED PHYSICS LABORATORY
(Common to all branches)

Sub Ref Code: BS211PH	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	SEE:50 Marks	Instruction: 2 hrs

LIST OF EXPERIMENTS

1. Study of V-I Characteristics of P-N Junction diode and to determine Forward & Reverse Resistances of the diode.
2. Determination of energy gap of a given Semiconductor.
3. Calculation of Seebeck Coefficient by measurement of thermoelectric power.
4. Study of resonance in LCR series circuit and to find resonance frequency & quality factor.
5. Study of parallel resonance in LCR circuits and to find frequency & quality factor.
6. Calculation of Efficiency, ripple factor of half wave and bridge rectifier (Without filters)
7. Determine the Specific Rotatory Power of Sugar Solutions of different concentration by Lorent half shade polarimeter.
8. Study of V-I Characteristics of Solar Cell & to calculate Fill Factor, Efficiency & Series resistance.
9. To find Planck's constant using Photo Cell and Draw its V-I Characteristics.
10. Characteristics of Zener diode and determination of Zener voltage.
11. Study of Hall Effect and determination of Hall's coefficient.

**** At least Eight experiments should be done by the student in each semester***.

SYLLABUS OF B.E 1/4 –II SEMESTER

APPLIED CHEMISTRY

(Common to CSE, ECE & IT branches)

Sub Ref Code: BS240CH	Credits: 02	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 2+1 hrs

OBJECTIVES	OUTCOMES
The course will enable the students to:	**At the end of the course students should be able to:**
1. To study types of conductance, variation of electrode potential and EMF. And to acquaint with applications of Galvanic Cell. 2. To classify and compare various types of batteries. 3. To appraise advanced engineering materials. 4. Get acquainted with engineering materials like liquid crystals, membranes and nano materials. 5. Expose to different high energy materials.	1. Construct the galvanic cell and to evaluate the effect of change in concentration on EMF and pH. 2. Select the battery for particular purpose based on chemical nature. 3. Suggest the suitable engineering materials for diversified applications. 4. Apply the knowledge of liquid crystals, membranes and nano materials in engineering applications. 5. Appreciate the applications & usage of high energy materials.

UNIT-I: Electro Chemistry

Types of conductors, description of conductivity cell-cell constant, Types of Conductance Specific conductance, Equivalent conductance & Molar conductance, and their relationship. Electrolytic and Galvanic cells. Electrode potential, IUPAC convention of Cell notation, Cell reaction, EMF, Electro chemical series – applications, Nernst equation, Numericals. Reversible & Irreversible cells. 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: Chemistry of Batteries

Definition, Types of batteries. Primary batteries Zn-Carbon battery and Zn-alkaline battery. Secondary batteries: Lead-acid battery, Ni-Cd battery-construction, charging & discharging reactions and their applications.

Modern Batteries: Li – ion batteries- construction, advantages and their applications.

Fuel cells: Concept of fuel cells and merits.

Construction and working of Molten carbonate fuel cell, phosphoric acid fuel cell, reactions and applications.

UNIT-III: Chemistry of Advanced Engineering Materials-I

a) Conducting polymers: Definition, Classification into extrinsic and intrinsic polymers. Mechanism of conduction in doped and undoped Polyacetylene & Polyaniline - Applications.

b) Composite materials: Introduction, advantages, constituents of composites. Types of composites-fiber reinforced composites (Glass, Carbon & Aramid). Layered composites- Applications.

UNIT-IV: **Chemistry of Advanced Engineering Materials -II**

a) Liquid Crystals: Introduction, classification of liquid crystals- Thermotropic and Lyotropic - Chemical constitution & liquid crystalline behavior. Molecular ordering in liquid crystals- Nematic, Smectic and Cholestric - Applications.

b) Membrane technology: Introduction, Definition, classification, working principle of membrane, casting methods-phase inversion, solvent evaporation method. Synthesis of poly phenylene oxide, poly ether sulphone and their casting. Applications of membranes.

c) Nano Materials: Introduction, preparation methods- (Vapor deposition & Sol-gel). Production of Carbon Nano tubes by Arc – Discharge method and their applications.

UNIT-V: **Rocket Propellants & Explosives**

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

b) Explosives/ High energy materials- Introduction, classification, precautions during storage, preparation of lead azide, TNT, Nitro glycerine and RDX

SUGGESTED BOOKS:

1. PC Jain, M Jain Engineering Chemistry, Dhanapathi Rai &sons, 16thed, New Delhi.
2. Sashi Chawla, Text book of Engineering Chemistry, Dhanapathi Rai &sons, New Delhi.
3. O.G. PALANNA, Engineering Chemistry, TMH Edition.
4. JC Kuriacose and J Rajaram, Chemistry in Engineering and Technology TMH, New Delhi.
6. SS Dara, S Chand &sons, Engineering Chemistry, New Delhi.
7. Puri, Sharma and Pathania Principles of physical chemistry, Vishal Publishing Co.
8. PL Soni and op Dharmarha, S Chand &sons, Text book of PhysicalChemistry, New Delhi.
9. S. Glasstone and D Lewis, Elements of Physical Chemistry.
10. Fred W. Billmeyer Jr., Textbook of Polymer Science.
11. Shikha Agarwal, Engineering Chemistry, Cambridge University Press, 2015.

w.e.f the academic year 2016-17

SYLLABUS OF B.E 1/4 –II SEMESTER

APPLIED CHEMISTRY

(Common to CIVIL, EEE and Mech branches)

Sub Ref Code: BS250CH	Credits: 02	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 2+1 hrs

OBJECTIVES	OUTCOMES
The course will enable the students to:	**At the end of the course students should be able to:**
1. To study types of conductance, variation of electrode potential and EMF. And to acquaint with applications of Galvanic Cell. 2. To classify and compare various types of batteries. 3. To appraise advanced engineering materials. 4. Study The behavior of composition of heterogeneous equilibrium systems. 5. Get acquainted with engineering materials like lubricants, refractories and insulators.	1. Construct the galvanic cell and to evaluate the effect of change in concentration on EMF and pH. 2. Select the battery for particular purpose based on chemical nature. 3. Suggest the suitable engineering materials for diversified applications. 4. Apply the principle of phase rule to heterogeneous equilibrium systems. 5. Apply the principles of lubricants, refractories and insulators in different engineering fields.

UNIT-I: Electro Chemistry

Types of conductors, Description of conductivity cell-cell constant, Types of Conductance Specific conductance, Equivalent conductance & Molar conductance, and their relationship. Electrolytic and Galvanic cells. Electrode potential, IUPAC convention of Cell notation, Cell reaction, EMF, Electro chemical series – applications, Nernst equation, Numericals. Reversible & Irreversible cells. 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: Chemistry of Batteries

Definition, Types of batteries. Primary batteries Zn-Carbon battery and Zn-alkaline battery. Secondary batteries: Lead-acid battery, Ni-Cd battery-construction, charging & discharging reactions and their applications.

Modern Batteries: Li – ion batteries- construction, advantages and their applications.

Fuel cells: Concept of fuel cells and their merits.

Construction and working of Molten carbonate fuel cell, phosphoric acid fuel cell, reactions and applications.

UNIT-III: **Phase rule**

Terms, Statement of phase rule, one component system-Water system-Condensed phase rule, two component system-Lead- Silver (Pb-Ag) system, Pattinson's process, Copper -Nickel (Cu-Ni) system, Lead – Tin system(Pb-Sn), Safety fuses and solders.

UNIT-IV: Engineering Materials

(a) **Lubricants:** Definition, Mechanism of lubrication: Hydro dynamic-Boundary-Extreme pressure lubrication, Classification: solid, semi solid and liquid lubricants, Properties of lubricants: Viscosity, viscosity index, Saponification number- determination and its significance, iodine value - determination and its significance.

(b) **Refractories:** Definition, requirements of a good refractory, classification and properties- Refractoriness, Refractoriness under load (RUL), Thermal spalling and Porosity. Applications of refractories.

(c) **Insulators:** Thermal and electrical insulators- characteristics and applications.

UNIT-V: Advanced Engineering Materials

a) Conducting polymers: Definition, Classification: extrinsic and intrinsic polymers. Mechanism of conduction in doped and undoped Polyacetylene & Polyaniline - Applications.

b) Composite materials: Introduction, advantages, constituents of composites. Types of composites based on matrix and dispersed phases-Fiber Reinforced Composites (Glass, Carbon & Aramid). Layered composites-Applications.

SUGGESTED BOOKS:

1. PC Jain, M Jain Engineering Chemistry, Dhanapathi Rai &sons, 16th ed, New Delhi.
2. Sashi Chawla, Text book of Engineering Chemistry, Dhanapathi Rai &sons, New Delhi.
3. O.G. PALANNA, Engineering Chemistry, TMH Edition.
4. JC Kuriacose and J Rajaram, Chemistry in Engineering and Technology TMH, New Delhi.
6. SS Dara, S Chand &sons, Engineering Chemistry, New Delhi.
7. Puri, Sharma and Pathania Principles of physical chemistry, Vishal Pub.Co.
8. PL Soni and op Dharmarha, S Chand &sons, Text book of PhysicalChemistry, New Delhi.
9. S. Glasstone and D Lewis, Elements of Physical Chemistry.
10. Fred W. Billmeyer Jr., Textbook of Polymer Science.
11. Shikha Agarwal, Engineering Chemistry, Cambridge University Press, 2015.

SYLLABUS OF B.E 1/4 –II SEMESTER
APPLIED CHEMISTRY LABORATORY
(Common to all branches)

Sub Ref Code: BS221CH	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	SEE:50 Marks	Instruction: 2 hrs

OBJECTIVES	OUTCOMES
The course will enable the students to:	**At the end of the course students should be able to:**
1. Describe the quantitative analytical techniques 2. Learn the working principle of the instruments 3. Apply the theoretical principles in experiments 4. Determine the Saponification value of a lubricant 5. Examine the accuracy	1.Analyze the given substance using conventional and instrumental techniques 2.Estimate the amount of substances by Potentiometry, and PHmetry 3. Evaluate the data from the practical observations 4.Asses the quality of a lubricant 5.Calculate the percentage of error of the results obtained.

Dichrometry

1. Estimation of Ferrous iron by $K_2Cr_2O_7$
2. Estimation of chromium by FAS

Iodometry

3. Estimation of Copper in brass / in the given solution
4. Estimation of Chloride in water sample
5. Determination of saponification number / Iodine number of a lubricant
6. Preparation of a Conducting polymer

Potentiometry

7. Construction of a galvanic cell / battery and study of variation of EMF / cell voltage with concentration of electrolyte solution
8. Estimation of Ferrous iron by redox titration method
9. Determination of fluoride in a given water sample by ion selective Electrode

P^H Metry

10. Estimation of strong acid and measurement of pH of an effluent
11. Estimation of weak acid

Electroplating

12. Electroplating of copper on iron.

A Student should perform atleast 8 experiments

SUGGESTED BOOKS:

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

SYLLABUS OF B.E 1/4 –II SEMESTER
OBJECT ORIENTED PROGRAMMING USING C++
(Common to all Branches)

Sub Ref Code: ES210CS	Credits: 03	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 3+1 hrs

Course Objectives	Course Outcomes
Students should be able to	Students will be able to
• understand basic notions of object oriented programming. • acquire object-oriented problem solving skills. • write programs in C++.	1. explain Object Oriented Programming concepts using C++. 2. design programs using functions, input/output operations, decision making and looping constructs. 3. create classes using object oriented design principles. 4. design programs using inheritance, polymorphism and exception handling. 5. describe basic data structures using OOP concepts.

UNIT-I (11 Hours)
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 (11 Hours)
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 (11 Hours)
Strings, Pointers and Dynamic Arrays, Recursion, Constructors, Destructors, Copy Constructors.

Static Polymorphism: Function and Operator Overloading, Friend Functions.

UNIT-IV (11 Hours)
Inheritance: The Notion of Inheritance, Derived Classes, Overriding, Virtual Base Class.
Runtime Polymorphism, Virtual Functions.
Function Templates and Class Templates.

UNIT-V (11 Hours)

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.
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.

w.e.f the academic year 2016-17

SYLLABUS OF B.E 1/4 –II SEMESTER
OBJECT ORIENTED PROGRAMMING USING C++ LAB
(Common to all Branches)

Sub Ref Code: ES211CS	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	SEE:50 Marks	Instruction: 2 hrs

Course Objectives

Students should be able to

- write, compile and debug programs in C++.
- formulate problems and implement in C++.
- acquire skills to solve computing problems.

LIST OF EXPERIEMNTS

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.

SUGESTED BOOKS:

1. Walter Savitch, "Problem solving with C++", 6th Edition, Pearson Education Publishing, 2009.
2. Behrouz A. Forouzan, Richard F. Gilberg, "Computer Science, A Structured Approach using C++", 2nd Edition, Cengage Learning, 2010.
3. Balaguruswamy, "Object-Oriented Programming with C++", 6th Edition, Tata Mc-GrawHill, 2013.

SYLLABUS OF B.E 1/4 –SECOND SEMESTER
ENGINEERING MECHANICS
(Common to Civil, Mechanical & EEE)

Sub Ref Code: ES220CE	Credits: 03	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 3+1 hrs

COURSE OBJECTIVES	COURSE OUTCOMES
1. To **compute** the mass moment of inertia and product of inertia of standard and composite sections. 2. To **understand** the concepts of dynamics and its principles. 3. To **explain** kinetics and kinematics of particles, projectiles, curvilinear motion, centroidal motion and plane motion of rigid bodies. 4. To **impart** the concepts of work-energy method and its applications to rectilinear translation, centroidal motion and plane motion. 5. To import the concept of impulse momentum relation	At the end of the course, students will be able to 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, rotatary motion and rigid body motion. 4. **Know** the concepts of work and energy principles subject and derive the work energy equations for translation, rotation, connected systems, fixed axis rotation and plane motion. 5. **Solve** problems related to impulse and momentum

UNIT-I: Product of Inertia & Mass moment of Inertia (14 Periods)
Product of inertia, Mass moment of inertia for solid and composite bodies. Radius of gyration.

UNIT – II: Kinematics (12 Periods)
Rectilinear motion, Curvilinear motion, Projectile motion, Velocity and acceleration Types of rigid body motion, and its analysis in a plane.

UNIT-III: Kinetics (12 Periods)
Analysis as a particle. Analysis as a rigid body in translation, Fixed axis rotation. Rolling bodies, Plane motion.

UNIT –IV: Work Energy (10 Periods)
Principles of work-energy, and its application to translation, Particle motion and connected systems. Fixed axis rotation and plane motion.

UNIT-V: Impulse and momentum (12 Periods)
Introduction, linear impulse-momentum, principal of conservation of linear momentum, loss of kinetic energy.

Suggested Books:

1. Singer F.L "Engineering Mechanics", Harper & Collins, Singapore 1994.
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
4. Beer F.P & Johnston E.R, Jr. Vector Mechanics for Engineers, TMH, 2004.
5. Hibbeler R.C & Ashok Gupta, Engineering Mechanics, Pearson Education, 2010.
6. Tayal A.K., Engineering Mechanics–Statics & Dynamics, Umesh Publications, 2011.
7. Basudeb Bhattacharyya,Engineering Mechanics, Oxford University Press, 2008.
8. Meriam. J. L. ,Engineering Mechanics, Vol-II Dynamics, John Wiley & Sons, 2008.

ONLINE RESOURCES:
NPTEL Course and Virtual labs at www.nptel.ac.in

SYLLABUS OF B.E 1/4 –SECOND SEMESTER

ENGINEERING GRAPHICS-II

(Common to all Branches)

Sub Ref Code: ES230CE	Credits: 04	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 3+2 hrs

Course Objectives	Course Outcomes
1. To **Explain** the principles involved in Section of simple solids 2. To **develop** surfaces of simple solids 3. To **Explain** intersection of cylinder with cylinder and cylinder with cone 4. To **Differentiate** between isometric view and isometric projection 5. To **Draw** orthographic views from pictorial views	At the end of the course students are able to: 1. **Draw** sectional views of simple solids 2. **Develop** the surfaces of simple solids 3. **Prepare** orthographic views of intersection of solids. 4. **Prepare** 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 (16 Periods)

True shape of sections, sections of prisms, pyramids, cylinders and cones.

UNIT-II: Development of Surfaces (14 Periods)

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 (16 Periods)

Intersection of cylinder and cylinder, cylinder and cone.

UNIT-IV : Isometric Projections (14 Periods)

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 (10 Periods)

Drawing orthographic views from Isometric views for simple objects.

SUGGESTED BOOK:

1. Bhatt N.D. "Elementary Engineering Drawing", Charotar Publishers, 2014.
2. Thomas E French, Charles J Vierck, Robert, J. Foster "Engineering Drawing and Graphic Technology", McGraw Hill Education, 1993.
3. Gill P.S. "Engineering Drawing: Geometrical Drawing", SK Kataria & sons,2012.

4. Venugopal.K "Engineering Drawing and Graphics + Autocad", New Age International (P) Ltd., New Delhi, 1998.
5. Siddiquee A.N "Engineering Drawing with a Primer on Autocad", Prentice hall of India Ltd., New Delhi, 2004.
6. Basanth Agrawal, Agrawal C.M "Engineering Graphics" First Edition, Tata McGraw Hill, 2012
7. BVR Gupta, M Raja Roy, "Engineering Drawing with AutoCAD", IK Int Pvt Ltd, 2009

ONLINE RESOURCES:

1. NPTEL virtual lab (www.nptel.ac.in)

w.e.f the academic year 2016-17

SYLLABUS FOR B.E 1/4 – SECOND SEMESTER

BASIC ENGINEERING MECHANICS

(Common to CSE, ECE & IT)

Sub Ref Code: ES100CE	Credits: 03	Sem Exam Duration: 3 Hrs
CIE: 30Marks	SEE:70 Marks	Instruction: 3+1 hrs

Course objectives	Course outcomes
1. To **learn** the resolution of a system of forces (coplanar, spatial, concurrent, non-concurrent) and compute their resultant. 2. To **compute** unknown forces by considering equilibrium of a body. 3. To **analyze** plane trusses of various configurations. 4. To **perform** analysis of bodies lying on rough surfaces. 5. To **locate** the centroid of a body and also compute the area moment of inertia of standard and composite sections.	***At the end of the course, students will be able to:*** 1. **Judge** whether the body under the action of planar or spatial force system is at rest or in motion. 2. **Analyse** equilibrium of a body subjected to a system of forces. 3. **Find** forces in the members of a given plane truss. 4. **Solve** problem of bodies subjected to friction. 5. **Locate** centroid and compute moment of inertia and polar moment of inertia of a given section.

UNIT – I: Force Systems (10 periods)

Resultant of coplanar concurrent forces, Components of force in space, Moment of force and its applications, Couples and resultant of force systems.

UNIT – II: Equilibrium of Force Systems (12 periods)

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

UNIT– III: Analysis of Structures (10 periods)

Analysis of trusses by method of joints and method of sections for plane trusses like Warren truss Pratt, truss, Fink truss etc.

UNIT –IV: Friction (12 periods)

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

UNIT – V: Centroid and Moment of Inertia (16 periods)

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 1994.
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.
4. Beer F.P & Johnston E.R "Jr. Vector Mechanics for Engineers", TMH, 2004.
5. Hibbeler R.C & Ashok Gupta, "Engineering Mechanics", Pearson Education, 2010.
6. Tayal A.K., "Engineering Mechanics – Statics & Dynamics", Umesh Publications, 2011.
7. Basudeb Bhattacharyya., "Engineering Mechanics", Oxford University Press, 2008.
8. Meriam. J. L., "Engineering Mechanics", Volume-I Statics, John Wiley & Sons, 2008.

ONLINE RESOURCES:

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

SYLLABUS OF B.E 1/4 –SECOND SEMESTER

BASIC ELECTRICAL ENGINEERING LAB

(for ECE branch)

Sub Ref Code: ES231EE	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	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 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: 25Marks	SEE:50 Marks	Instruction: 2 hrs

Course objectives	***Course outcomes***
Students will be able to	**Students will be able to**
1. Adopt safety practices while working with various tools 2. Identify, select and use various marking, measuring, holding, striking and cutting tools & equipments. 3. Manufacture items within tolerance and inspect the job for specified dimensions 4. Demonstrate knowledge of welding process selection and capabilities. 5. To carry out exercise in metal removal process by using varioous machines.	1. Demonstrate an understanding of and comply with workshop safety regulations. 2. Identify and use marking out tools, measuring equipment and to work to prescribed tolerances. 3. Produce components in the trades of smithy, welding and plumbing. 4. Understand the manufacturing process of turning, thread cutting and milling

w.e.f the academic year 2016-17

SMITHY:
1. Flattening (round to square cross section)
2. Bending Operation (U-shape)
3. S-shape hook
4. Fullering Operation (demo)

WELDING:
1. Bead formation
2. Butt joint
3. Lap joint
4. Gas welding/Spot welding (demo)

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

MACHINING:
1. Plain turning and step turning
2. Taper turning
3. Thread Cutting
4. Milling operation (demo)

Learning Resources:

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

Online Resources:

4. www.technologystudent.com
5. www.mewelding.com

SYLLABUS OF B.E 1/4 –SECOND SEMESTER

CS WORKSHOP

(for CSE Branch)

Sub Ref Code: ES241CS	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	SEE:50 Marks	Instruction: 2 hrs

Course Objectives

Students should be able to

- assemble/disassemble PC Hardware and understand the installation of Operating system
- acquire skills on HTML programming and internet etiquette
- learn to create format and design industry standard documents using LaTeX
- implement basic Matlab programs
- implement basic programs 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. Internet & HTML:

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. Documentation Using LaTeX: Introduction to LaTeX, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Page Formatting, Single/Multi Column, Pictures/Objects, Drawing, Hyperlinks, Header/Footer and Tables.

IV. MATLAB

Introduction to Vectors, Introduction to Matrices, Vector Functions, Operators, Loops, Plotting, Executable Files, Subroutines, if Statement, Data files, Strings, Functions, Arrays.

V. Python

Basic Syntax: Interactive Mode Programming, Script Mode Programming.
Variable Types, Basic Operators, Decision Making, Loops
Advance Data Types: Numbers, Strings, Lists, Tuples, Dictionary.
Functions: Defining a function, calling a function, Scope of variables, Local & Global Variables.
Modules: The from…import statement, Namespaces and Scoping,
The globals() and locals() Functions, Date & Time.
Files I/O: Printing to the Screen, Reading Keyboard Input, Opening and Closing Files, Reading and Writing Files.

SUGGESYED BOOKS:

1. "Introduction to Information Technology", ITL Education Solutions Limited, Pearson Education, 2005.
2. Govindarajulu, "IBM PC and Clones: Hardware, Troubleshooting and Maintenance", Tata McGraw-Hill, 2nd Edition, 2008.
3. Peter Norton, "Introduction to Computers", Tata McGraw-Hill, 6th Edition, 2004.
4. Kate J. Chase, "PC Hardware and A+ Hand book", Microsoft Press, 2004.
5. Singh Y. Kirani, Chaudhuri B, "MATLAB Programming", PHI Learning Pvt. Ltd., 2007.
6. Stefan Kottwitz, "LaTeX Beginner's Guide", Shroff/Packt Publishers, 1st Edition, 2012.
7. Matthew Johnson, "An Introduction to Python for Undergraduate Engineers", Wiki Books 2013.

SYLLABUS OF B.E 1/4 –SECOND SEMESTER

IT WORKSHOP

(for IT branch)

Sub Ref Code: ES251IT	Credits: 01	Sem Exam Duration: 3 Hrs
CIE: 25Marks	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:**
1. Assemble different components of the system & identify the different connectors and their technical specifications. 2. Install Operating system with partitions & anti-virus software and work with various productivity tools such as office tools & Photo editing tools. 3. To use different search engines and appreciate the difference among them. 4. Use different measuring instruments like multi-meter, oscilloscope, function generator and identify the different electronic components (Resistor, Inductor & capacitor) and use them in simple circuits.	1. Assemble and disassemble the various components of computer system, create partitions and install operating system and other application softwares. 2. Use Productivity tools to create documentation and design templates. 3. Identify and use the different electronic components & measuring instruments in R L C based circuits.

PC Hardware

1. **System Assembly** (identify and describe the relationships and role of the components of the logical diagram of computer. RAM, ROM, BIOS , input, output, storage).
   Relate the logical diagram of a computer system to the physical system identifying physical components of a computer and describing their purpose (eg. The processor, memory chips, motherboard, disk drives, and controller card such as AGP board, network cards, sound card, as well as parallel and serial ports etc)

System Software

2. Load the OS with partitions for latest Windows and Linux, Configure for Network connection (TCP/IP).
   Be able to use basic Commands in Linux and DOS

Productivity Tools

3. **Libre Office Writer:** Create documents with standard formatting commands, single/ multi column, inert pictures/ objects, drawing, hyperlinks, header/footer, tables No. macros
4. **Libre Office Impress:** Create presentations with preset animations using different layouts, backgrounds, slide master, insert pictures/objects, drawings, hyperlinks, header/ footer, tables
5. **Libre Office Calc:** Creating worksheets with various kinds of data,

making charts, conditional formatting, awareness of the various functions- statistical, date/time, math/trig etc, ability to explore (help) and use these functions if need be, demonstration through some common functions like sum, average, standard deviation

6. **Libre Office Base:** Create a new database, create a Table in the Database, entering data into the Table, Sort the table, Move & Deletion of Rows and Columns, Query the table, Create a Form and Report on the Table
7. **Photoshop:** The use of Toolbar, Colour correction, Touch ups and enhancements, Basic drawing with Pen tool

Search Engines and Cyber Hygiene

8. Know what search engines are and how to use the search engines. Install an anti -virus software, configure personal firewall and windows update on the computer

Electronics Lab Fundamentals

9. Study of measuring and diagnostic instruments like multi-meter, function generator, oscilloscope, power supplies etc.,
   Activities
   - Study the function of each instrument and their applications.
   - Demonstration of the usage of the instruments by conducting simple experiments.
10. Identify the technical specifications of different electronic components like R, L, C, Transistors & ICs using their Data Sheets.
    - Determining the resistance value using colour code
    - Identifying the terminals of transistors, diode and testing them using multimeter
    - Demonstration of the R L C components by conducting simple experiments

SUGGESTED BOOKS:

1. ITL Education Solutions limited, 'Introduction to Information Technology', Pearson Education, 2005
2. Govindarajulu, 'IBM PC and Clones: Hardware, Trouble shooting and Maintenance', Tata McGraw-Hill, 2008
3. Peter Norton, 'Introduction to Computers', Tata McGraw-Hill ,6th edition
4. J. Chase, 'PC Hardware and A+ Hand book, PHI (Microsoft)
5. Data Sheets and Manuals of the Electronic Components and Instruments respectively.

ONLINE RESOURCES:

1. https://en.wikibooks.org/wiki/How_To_Assemble_A_Desktop_PC
2. https://www.libreoffice.org/discover/libreoffice

Note: Depending on the amount of work done in each activity and submission of the record, marks / grade will be awarded.

FACULTY MEMBERS

DEPARTMENT OF CIVIL ENGINEERING

Department Phone: 040-23146010 and 6011

1	Dr. B.Sridhar	Prof. & HOD	9949887009
2	Dr. B.L.P. Swami	Prof.	9848032940
3	Dr. M.V.Rama Rao	Prof.	9440257251
4	Mr. M.Bhasker	Assoc.Prof.	9440747409
5	Dr. G.Shravan Kumar	Assoc.Prof.	8019455346
6	Dr. M.Srinivas	Assoc.Prof.	9440132963
7	Dr. C.Mohanlal	Assoc.Prof.	9989673220
8	Mr. M.V.S.S.Sastry	Assoc.Prof.	9848129659
9	Dr. Tallanki Srinivas	Assoc.Prof.	9440330458
10	Mr. S.Vijay Kumar	Assoc.Prof.	9440483326
11	Dr. K. Jayasree	Assoc.Prof.	9866423811
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13	Ms. Kumari Koustuvee	Asst.Prof.	9441600204
14	Ms. Dhatri.P	Asst.Prof.	9866886438
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18	Ms.Lakshmi Pradeep	Asst.Prof.	7416733727
19	Ms.Karishma Kattela	Asst. Prof.	9705726767
20	Mr. J.Y.V. Shiva Bhushan	Asst. Prof.	7032238887

DEPARTMENT OF CSE

Department Phone: 040-23146020 and 6021

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4	Mr. R. Sateesh Kumar	Asst. Prof.	9849194447
5	Mr. K. Jairam Naik	Asst. Prof.	9959971548
6	Ms. B. Syamala	Asst. Prof.	8143006669
7	Mr. P. Narsaiah	Asst. Prof.	8885274002
8	Mr. M.S.V. Sashi Kumar	Asst. Prof.	9885127504
9	Mr. V. Punna Rao	Asst. Prof.	8801706641
10	Mr. C. Gireesh	Asst. Prof.	9948021558
11	Mr. T. Balaji	Asst. Prof.	9966895191
12	Ms. S. Suba	Asst. Prof.	7799175117
13	Mr. I. Navakanth	Asst. Prof.	9550578779
14	Smt. T. Jalaja	Asst. Prof.	9949065580
15	Ms. C. Divya	Asst. Prof.	9642991668
16	Ms. T. Nishitha	Asst. Prof.	9618771043
17	Mr. T. Saikanth	Asst. Prof.	9866178143
18	Ms. M. Akhila	Asst. Prof.	8885774756
19	Ms. M. Shailaja	Asst. Prof.	9290103419
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21	Ms. V. Sireesha	Asst. Prof.	9440649015
22	Ms.Shanmuga Sundari	Asst. Prof.	9100447815
23	Ms.P. Anusha	Asst. Prof.	9676646920
24	Mr.N. Shiva Kumar	Asst. Prof.	7569693939
25	Mr.M. Sudha Rani	Asst. Prof.	7036367456
26	Ms.G. Sridevi	Asst. Prof.	9032173988

DEPARTMENT OF ECE

Department Phone: 040-23146040 and 6041

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02	Dr. E. Sreenivasa Rao	Prof.	9490217960
03	Dr. P.A. Govindacharyulu	Prof.	9849992067
04	Dr. M. Satyam	Prof.	9885595490
05	Dr. N. Suryanarayanamurti	Prof.	9441029775
06	Dr. K. Dheerga Rao	Prof.	9705384743
07	Mr. P. Venkata Ramana	Prof.	9666697441
08	Dr. N.Siva Sankar Reddy	Assoc. Prof.	9440741623
09	Ms. G.R.Padmini	Assoc.Prof.	9440521840
10	Mr. G.Venkateswarlu	Assoc.Prof.	9440424932
11	Ms. A. Sri Lakshmi	Assoc.Prof.	9290878533
12	Mr. S.Sambaiah	Asst. Prof.	9849020415
13	Mr. M. Prasanth	Asst. Prof.	9948362013
14	Ms. V. Aruna	Asst. Prof.	9701797479
15	Ms. S. Aruna Deepthi	Asst. Prof.	9440882372
16	Ms. Shaik Afroz Begum	Asst. Prof.	9292102100
17	Mr. V. Krishna Mohan	Asst. Prof.	9494412612
18	Ms. Ch. Neethu	Asst. Prof.	8184923187
19	Ms. K. Deepthi	Asst. Prof.	9000240306
20	Mr. N. Abid Ali Khan	Asst. Prof.	8897727547
21	Ms. K.R. Deepthi	Asst. Prof.	9493550926
22	K. Rama Krishna Reddy	Asst. Prof.	8886939560
23	Mr. M. Ramanjaneyulu	Asst. Prof.	9985378253
24	Mr. O. Rajesh	Asst. Prof.	9951868527
25	Mr. Md. Ayub	Asst. Prof.	9966021508
26	Mr. V. Prabhakar	Asst. Prof.	9494541883
27	Mr. R. Goutham	Asst. Prof.	9908433101
28	Mr. B. Uma Mahesh Babu	Asst. Prof.	9912616809
29	Ms. R. Leelavathi	Asst. Prof.	8143672172
30	Ms. Vibha D. Kulkarni	Asst. Prof.	9966208656

DEPARTMENT OF EEE

Department Phone: 040-23146030 and 6031

1	Mr. K.V. Ramana Murthy	Prof. & HOD	9440225981
2	Dr. Sukh Dev Sao	Prof.	7795562757
3	Dr. M. Chakravarthy	Professor	9849979156
4	Dr. K. Ravi Kumar	Associate Prof.	9885859159
5	Ms. Ch. V.S.S. Sailaja	Assoc. Prof.	9949119301
6	Mr. M. Srinivasulu	Asst. Prof. (SS)	9908610440
7	Ms. G. Sandhya Rani	Asst. Prof. (SS)	9494771587
8	Mr. G. Mahesh	Asst. Prof.	9848629590
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

DEPARTMENT OF IT

Department Phone: 040-23146050 and 6051

1	Dr. K. Ram Mohan Rao	Prof. & HOD	9866670213
2	Dr. N.Vasantha	Professor	9849590500
3	Ms. S. Aruna	Assoc. Prof.	9866288965
4	Ms. S. Rajyalakshmi	Asst. Prof.	9059842554
5	Ms. Ch. Pavani	Asst. Prof.	9959730049
6	Ms. D. Kavitha	Asst. Prof.	9886922662
7	Mr. N. David Raju	Asst. Prof.	9948673250
8	Mr. G. Rajashekhar	Asst. Prof.	9849871143
9	Mr. K. Shyam Sunder Reddy	Asst. Prof.	9866595900
10	Mr. M. Vishnu Chaitanya	Asst. Prof.	8686709187
11	Ms. DRL Prasanna	Asst. Prof.	8008527776
12	Ms. L. Divya	Asst. Prof.	9866704851
13	Ms. C. Swetha	Asst.Prof.	9160400975
14	Ms. K. Madhuri	Asst.Prof.	9908180408
15	Ms. B. Pavani Kumari	Asst.Prof.	9490147291
16	Mr. G. Srinivas Rao	Asst.Prof.	9966461156
17	Mrs. Kratika Sharma	Asst.Prof.	8989541773
18	Mrs. Ambati Sruthi	Asst.Prof.	9603758538
19	Ms. Ch. Swapna	Asst.Prof.	9177586877
20	Ms.C. Sirisha	Asst.Prof.	9618258122
21	Ms.S.K. Chaya devi	Asst.Prof.	9912021322
22	Ms.J. Sunitha	Asst.Prof.	8686363901
23	Ms.B. laxmi Soujanya	Asst.Prof.	7382189064

DEPARTMENT OF MECHANICAL ENGINEERING

Department Phone: 040-23146060 and 6061

1	Dr. G.V. Ramana Murthy	Prof. & HOD	9985306522
2	Dr. K.Kishore	Prof. & Director (T&P)	9440868055
3	Dr. A.Srinivas	Prof.	9490935865
4	Dr. T.Ramamohan Rao	Prof.	9440886144
5	Mr. K.Srinivasa Rao	Assoc.Prof.	9908212224
6	Mr. S.Venkataiah	Assoc.Prof.	9985087394
7	Mr. P.Venkateshwara Rao	Assoc.Prof.	9247851119
8	Mr. K.Veladri	Assoc.Prof.	9490684448
9	Dr. P.V.Gopala Krishna	Assoc.Prof.	9985356822
10	Mr. VBS Rajendra Prasad	Assoc. Prof.	9866351886
11	Mr. B.Radha Krishna	Asst.Prof. (SG)	7702234605
12	Mr. J. Anjaneyulu	Asst. Prof. (SS)	9490925436
13	Mr. S. Sreekrishna	Asst. Prof.	9494872379
14	Mr. M. Sudhakar	Asst. Prof.	9290094197
15	Mr. K. Spurgeon	Asst. Prof.	9704822207
16	Mr. D. Govinda Rao	Asst. Prof.	97041667494
17	Mr. B. Naga Manohar	Asst. Prof.	9441368945
18	Mr. B. Sandeep	Asst. Prof.	9492427678
19	Mr. N. B. Samba Murthy	Asst. Prof.	9492036139
20	Mr. Suda Venkateswarulu	Asst. Prof.	8985639463
21	Mr. M. Harish	Asst. Prof.	8985802807
22	Mr. Venu Gopal Reddy	Asst. Prof.	9948129687
23	Mr. K. Santosh Kumar	Asst. Prof.	9963903196
24	Ms. P.V.S. Subhashini	Asst. Prof.	9866802894
25	Ms.S. Keerthana	Asst. Prof.	9030031715
26	M. Jitender Reddy	Asst. Prof.	9032876445
27	Mr.R. Sandeep	Asst. Prof.	9666312654

DEPARTMENT OF H & SS

Department Phone: 040-23146094

1	Dr. Jacqueline Amaral	HoD	9493983343
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	Mr. K. Ramana Prasad	Asst. Prof.	8332921359
8	S. Vimala	Asst. Prof.	

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

DEPARTMENT OF MATHEMATICS

Department Phone: 040-23146091

01	Dr. T.Sudhakara Rao	Associate Prof.& HoD	9441901731
02	Dr. G.Omprakasham	Associate Prof.	9849726189
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

DEPARTMENT OF PHYSICS

Department Phone: 040-23146092

01	Dr. A.S.Sai Prasad	Prof. & HoD	9959418896
02	Dr. M.Ramalingeswara Rao	Assoc. Prof.	9848516603
03	Dr. P.Venkateswara Rao	Assoc. Prof.	9885345663
04	Dr. V.Ravi Kumar	Assoc. Prof.	9866979357
05	Dr. G. Ramadevudu	Asst. Prof. (Sr. Scale)	9247802706
06	Mr. T. Satish Kumar	Asst. Prof.	9848285492

DEPARTMENT OF CHEMISTRY

Department Phone: 040-23146093

01	Dr. Ch.Gouri Shankar	Assoc. Prof & HOD	8143033665
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
08	Ms. P. Rama Devi	Asst. Prof.	9885385849

CAMPUS PLACEMENTS

BE STUDENTS' PLACEMENT DETAILS - 2016 BATCH

Branch	CSE	ECE	EEE	IT	MECH.	CIVIL
No. of Students registered with 60% and above Marks	133	137	61	117	125	59
Gross Selections	240	235	78	172	139	56
Net Selections	122	127	46	96	94	34
% of Selections	91.73	92.7	75.41	82.05	75.2	57.63

S.No.	Details	Total
1	No of students with 1 Offer(s)	265
2	No of students with 2 Offer(s)	150
3	No of students with 3 Offer(s)	66
4	No of students with 4 Offer(s)	32
5	No of students with 5 Offer(s)	06
Net Selections		**519**

STUDENTS PLACEMENT INFORMATION OF 2016 Batch

S. No	Organization	Package (Rs Lakhs p.a.)	No. of Selections
1	Oracle India Private Ltd.,	7.5	7
2	Deloitte Consulting (India) Private Limited	6.2	22
3	Accolite Software India Pvt. Ltd	10	3
4	Mu-Sigma	4.3	3
5	NetCracker	5.2	26
6	Accenture	3.5	253
7	Cognizant	3.35	164
8	Infosys	3.25	225
9	CapGemini India	3.15	24
10	Unistring Tech Solutions Pvt Ltd Internship (5K) & Employment	2	0
11	Progress Software Development Private Limited Internship	12.5K pm	0
12	Cybage Software India Private Limited	2.8	13
13	Kony Labs (through Mission R & D)	7.2	4
14	UX Reactor	3	3
15	UURMI Systems Pvt. Ltd. (Internship)	7.5K pm	0
16	Hyundai Mobis India Limited	3.75	11
17	Atria Convergence Technologies Pvt. Ltd (ACT)	3.75	2
18	ADP India	4	4
19	Pramati Technologies Private Limited (through Mission R & D)	6	1
20	Thomson Reuters (Internship)	8.0K pm	0
21	Pega Systems	7.2	7
22	Computer Science Corporation (CSC) (Big Data Vertical)	3.5	7
23	NTT Data	3	2
24	CDK Global	4.5	6
25	soCtronics (through VEDA IIT)	3	3
26	Polaris Financial Technology Ltd	3.5	1
27	Zetagile (Internship)	5K pm	0
28	Mytrah Energy (India) Limited	3.75	4
29	Applaud Solutions India (P) Ltd	4.50 to 5.00	4
30	AMD R&D Center India Pvt Ltd Internship (25K) & Employment	7.2	0
31	Callidus Cloud India Private Limited	6.42	3
32	Customfurnish India Private Limited (Internship)	12K pm	3
33	Hexagon Capability Center India Pvt. Ltd.(HCCI)	4.75	3
34	Reva Solutions Internship (5K per month) & Employment	2.4	3
35	United Health Group (UHG)	3.5	30
36	BlackKnight Financial Services Internship (10K per month) & Employment	1.8	3

37	Hitachi Consulting Software Services India Pvt. Ltd.	4.25	0
38	Value Labs Internship (7.5K pm) & Employment	1.8	0
39	Avaya India Private Limited Internship (15K pm) & Employment	6	0
40	RedPine Signals Inc.,	3.5	4
41	PamTen Inc., Internship (10K pm) & Employment (Lakhs p.a.)	2.4	5
42	Persistent Systems Limited	3.75	4
43	Safal Solutions., Internship (5K pm) & Employment	1.8	0
44	FTD Inida Private Limited	3.75	2
45	Rubicon Red Software India Private Limited	3.5	0
46	Sarayodha Softech India Private Led	1.5	1
47	Capital IQ India	5.84	1
48	KTree Computer Solutions India Pvt Ltd	2	2
49	Oracle India Private Ltd., (Vertical : 'Applications Development')	7.5	8
50	Value Lab	2	4
51	Host Analytics (Intern) (Rs 15K p.m)	15K p.m	2
52	Genpact	1.8	11
53	SKS Microfinance Limited	3	2
54	Samsung R&D Institute India	7.5	3
55	Huawei Technologies India Pvt. Ltd.	7.5	5
56	Aarvee Associates Architects Engineers & Consultants Pvt. Ltd.	3.6	4
57	Raster Technologies	1.8	2
58	FMC Technologies India Pvt Ltd	5.54	3
59	Ashoka Developers & Builders Ltd.	2	6
60	Arani Power Systems	1.8	1
61	Agile CRM	3	2
62	Abacus Service Corporation	2.4	3
63	ValueMomentum Software Services	3.5	1

PERSONAL NOTES

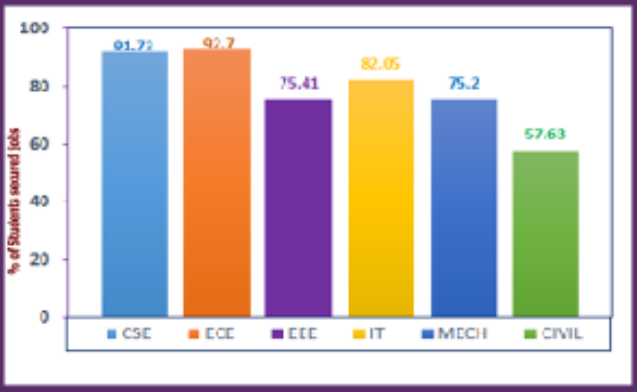
Telephone Numbers

Name & Address	E-Mail	Office	Residence

Students Celebrating Traditional Day in College Campus

VASAVI COLLEGE OF ENGINEERING
(Autonomous)

CAMPUS PLACEMENT DETAILS-B.E 2016 BATCH



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