

Bapatla Engineering College
(Autonomous)
BAPATLA



ACADEMIC RULES & REGULATIONS and SYLLABUS
(w.e.f. 2016-2017)

HAND BOOK

First Year B.Tech



Bapatla Engineering College:: Bapatla
(Autonomous under Acharya Nagarjuna University)
(Sponsored by Bapatla Education Society)
BAPATLA - 522102 Guntur District, A.P.
www.becbapatla.ac.in

Vision & Mission of the College

Vision:

To build centers of excellence, impart high quality education and instill high standards of ethics and professionalism through strategic efforts of our dedicated staff, which allows the college to effectively adapt to the ever changing aspects of education.

To empower the faculty and students with the knowledge, skills and innovative thinking to facilitate discovery in numerous existing and yet to be discovered fields of engineering, technology and interdisciplinary endeavors.

Mission:

Our mission is to impart the quality education at par with global standards to the students from all over India and in particular those from the local and rural areas. We continuously try to maintain high standards so as to make them technologically competent and ethically strong individuals who shall be able to improve the quality of life and economy of our country.

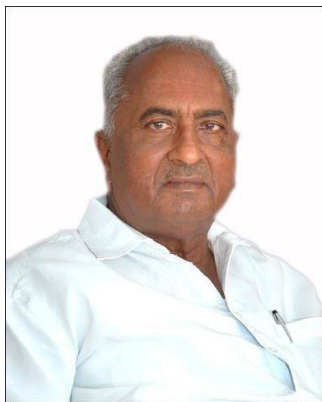
Profile of the College

Year of Start	1981
Courses offered	<p>B.Tech: Chemical Engineering (CH), Civil Engineering (CE), Computer Science & Engineering (CSE), Electronics & Communication Engineering (ECE), Electrical & Electronics Engineering (EEE), Electronics & Instrumentation Engineering (EIE), Information Technology (IT), Mechanical Engineering (ME)</p> <p>M.Tech: CE (Structural Engineering), ME (CAD/CAM), ECE (Communication Engineering & Signal Processing), EEE (Power Systems Engineering) & C.S.E</p> <p>Master of Computer Applications (MCA)</p> <p>M.Sc.: Mathematics, Physics, Electronics, Chemistry (Organic & Analytical) & Computer Science</p>
Accredited by NBA in the years	07.05.2003 (CE, CSE, ECE, EEE, EIE, ME) 16.03.2007 (CH, CE, CSE, ECE, EEE, EIE, IT & ME) 04.01.2013 (CH, CE, CSE, ECE, EEE, EIE & ME)
Autonomous Status	2010
Research Park	Innovation Centres: 1) Kuka Robotic Technology Centre 2) Bosch Rexroth Centre of Competence in Automation Technologies 3) Siemens Centre of Excellence
Library	Titles: 27,585; Books: 67,966, Journals: International Online-275, Print-28, National Print-90, Educational CDs- 2,589; No. of Staff: 8
Sports facilities	Cricket, Basket Ball, Volley Ball, Ball Badminton, Hockey, Tennis, Foot Ball, Table Tennis, Chess, Caroms & Weight Lifting, Weight Training
Area	30 Acres; Built-up Area: 56102 Sq.mt.
Awards	Best Library (2014), Best laboratory (2009, 10, 11), Best UG Performance College (2011, 12) from Acharya Nagarjuna University
CISCO	A two-way interactive CISCO Digital Media System that is first of its kind in the South Asia Pacific Region at a cost of Rs.3 Crores
Placement/Training	No. of Students placed in 2015-16: 378, No. of Companies visited: 41
Students Activities	Suryodhaya Society for Awakening Community (SAC) for social service, Centre for Creative Arts (CCA) for cultural & arts and AWAAZ the literary club with the main motto of nurturing the inherent talents in the students.
NCC	NCC (Army wing) unit with 50 cadets. Training will be given by the P.I. Staff from 1(A) Engr. Coy, Guntur.

ABOUT THE BAPATLA EDUCATION SOCIETY

BAPATLA EDUCATION SOCIETY was established in the year 1962 registered No:58/1962 under societies act XXI of 1860 with the objectives to found and run the Educational & Cultural Institutions.

Distinguished Office Bearers of the Society:



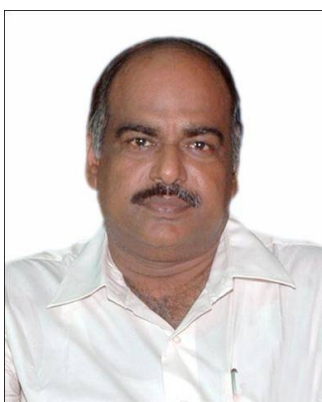
Sri.M. Seshagiri Rao Garu,
President, BES



Sri.P. Raghu Ram Garu,
Vice President, BES



Sri T.Rama Krishna Garu,
Vice President, BES



Sri.Manam Nageswara Rao
Garu, Secretary, BES



Sri. K. Lakshmi Narayana
Garu, Correspondent, BES



Sri P. Samba Siva Rao Garu,
Treasurer, BES

The management members are imbued with a spirit of selfless service and believe in the principle of Academic autonomy. Transparency of all financial transactions is strictly adhered and all payments and receipts are through bank transactions only. The Management obtains objective feedback about all aspects of the college and suitably advises and motivates employees in a discrete manner. As a mark of commitment to good management, rules and regulations are applied with justice and fair play. Above all, the management makes all out effort to provide healthy environment on the campus. (Lawns, Greenery including 1000 neem trees and CC roads provided)

MESSAGE

Dr. N. Sudhakar, M.Tech., Ph.D

Principal, Bapatla Engineering College.



Welcome to Bapatla Engineering College. The college is one of the first generation private engineering colleges started in the year 1981 and is regarded as one of the best engineering colleges in the state of Andhra Pradesh. The teaching learning process in the campus is meticulously planned and effectively implemented by the Heads of the Departments with the able support of the staff members. Continuous evaluation backed by remedial classes, student counselling and parent interactions, form the nucleus of the teaching learning process.

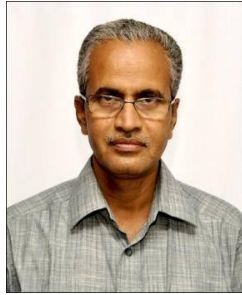
The college is chosen by four world renowned giants to have their centers of research and innovation - Bosch Rexroth Center of Competence in Automation Technologies, Siemens Center of Excellence and Kuka Robotic Technology Center under one roof in a unique Research Park established at a cost of Rs 20 Crore.

BEC has taken the class room teaching to world class level through the two-way interactive Cisco Digital Media System, which is the first of its kind in whole South Asia pacific region. The college provides Campus Recruitment Training on continuous basis and Placement Programme for the final year students and has good placement record for the past five years. 378 students have been placed in various reputed companies for the academic year 2015-16. The students of the college continuously excel in national and international competitive examinations like GATE, GRE and TOEFL.

The college is enriched with well-established library with Digital Library facility that caters to the needs of modern student. The institution is a hub of Student clubs that helps them to gratify their creative and innovative minds and weaving social responsibility with leadership qualities among students. The college also provides amenities like subsidized transportation, food court, mineral water, internet, Bank, Post office, Ladies Hostel and Dispensary equipped with an ambulance for the convenience of faculty, staff and students.

We wish all the students to utilize the infrastructure and the experienced faculty of our institution to equip themselves with emerging technologies and innovative skills that make them lead the nation in to new heights of advancement and development to enrich every citizen's life.

Heads of Departments



Dr. J. S. Rao,
Head, Chemical
Engg. & COE



Dr. Naga Satish,
Head, Civil
Engineering



Prof. V. Chakradhar,
Head, CSE



Dr. B. Chandra
Mohan, Head, ECE



Smt. N. Rama Devi,
Head, EEE



Prof. Ch. Ramesh,
Head, EIE



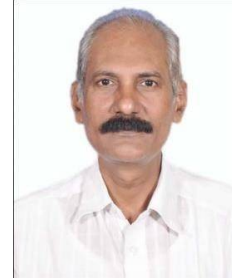
Prof. N. Siva Rama
Prasad,
Head, IT



Dr. M. Venkateswara
Rao, Head,
Mechanical Engg.



Dr. P. Vijaya Saradhi
Head, Mathematics



Dr. K. Rama Krishna,
Head, Physics



Dr. V. Madhava Rao,
Head, Chemistry



Dr. P. Asha Madhavi,
Head, English



Mr. K. N. Prasad,
Head, MCA



Mr. A. Rama Mohana
Rao, Librarian



Mr. D. Narayana
Chowdary,
Head, Placements



Dr. T. Chandrasekhara
Rao, Warden,
Campus Hostel



Dr. T. Srinivasa Rao,
Head, NCC



Mr. K. Ramesh Babu,
Office Superintendent



Bapatla Engineering College:: Bapatla (Autonomous)

Academic Rules & Regulations for B. Tech Programme

(As Approved by The Academic Council & The Governing Body of the College)

(Amended in August 2014; Applicable to the students admitted into the First year B.Tech from the academic year 2014-2015 onwards).

1.0 EXTENT: All the rules and regulations, specified herein after, shall be read as a whole for the purpose of interpretation and when a doubt arises, the interpretation of the Chairman, Academic Council, Bapatla Engineering College (Autonomous) is final. As per the requirements of the Statutory Bodies, The Principal, Bapatla Engineering College (Autonomous), shall be the Chairman of the College Academic Council.

ADMISSIONS:

Admission into the First year of any Four Year B.Tech Programmes of study in Engineering:

Admissions into the first year of B.Tech Programme of Bapatla Engineering College (Autonomous) (**Subsequently referred to as B.E.C**) will be as per the norms stipulated by Acharya Nagarjuna University and the Govt. of Andhra Pradesh from time to time.

Admission into the Second year of any Four year B.Tech Programmes of study in Engineering:

Admissions into the second year of B.Tech Programme of B.E.C will be as per the norms stipulated by Acharya Nagarjuna University and the Govt. of Andhra Pradesh from time to time.

Admissions with advance standing: These may arise in the following cases:

- 1) When a student seeks transfer from other colleges to B.E.C and intends to pursue B.Tech at B.E.C in an eligible branch of study.
- 2) When students of B.E.C get transferred from one regulation to another regulation or from previous syllabus to revised syllabus.
- 3) When a student, after long discontinuity, rejoins the college to complete his/her Programme of study for the award of the degree.
- 4) When a student is not able to pursue his/her existing Programme of study but intends to get transferred to another Programme of study.

These admissions may be permitted by the Academic Council of B.E.C as per the norms stipulated by the statutory bodies and the Govt. of Andhra Pradesh from time to time. In all such cases for admission, when needed, permissions from the statutory bodies are to be obtained and the Programme of study at B.E.C will be governed by the transitory regulations stipulated in **5.3**.



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3.0 DURATION OF THE PROGRAMME AND MEDIUM OF INSTRUCTION: The duration of the B.Tech. Programme is for four academic years consisting of two semesters in each academic year. The medium of instruction and examinations is English. The timeline of a semester is as follows.

SNo	Activity	Description
1.	Number of Semesters in an Academic Year	Two
2.	Regular Semester duration in Weeks	20
3.	Academic Activities Schedule	
	Course Work & Internal Assessment	17 Weeks
	Examination Preparation	1 Week
	Examinations	2 Weeks
4.	Evaluation	Continuous Internal Evaluation (CIE) with a weightage of 40% and Semester End Examinations (SEE) with a weightage of 60% of the student's performance in course/laboratory work and other activities, if any.
5.	Other Items	The minimum number of working days in an academic year shall be 180.
		Academic schedules prescribed by the college shall be adhered to by all the concerned.
		Students failing in any course shall register for the supplementary examination and shall secure a pass grade in SEE afresh in that course. This shall continue until a pass grade is obtained in the said course.

4.0 MINIMUM No. of INSTRUCTION DAYS:

Each semester shall consist of a minimum of 90 instruction days.

Programmes of study in B.Tech:

The Four year B.Tech Programme is offered in the following branches of study:

S.No.	Title of the UG Programme	Abbreviation
1.	Civil Engineering	CE
2.	Chemical Engineering	CH
3.	Computer Science & Engineering	CS
4.	Electrical & Electronics Engineering	EE
5.	Electronics & Communications Engineering	EC
6.	Electronics & Instrumentation Engineering	EI
7.	Information Technology	IT
8.	Mechanical Engineering	ME



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Structure of the Programme:

Each Programme of a Discipline or a branch of study shall consist of:

- 1) General courses in Basic Sciences, Basic Engineering Sciences, Social Sciences & Humanities.
- 2) Interdisciplinary courses in Engineering to impart the fundamentals of Engineering to the student.
- 3) Compulsory core courses to impart broad based knowledge needed in the branch of study concerned.
- 4) Elective courses are to be chosen by the student based on his/her interest and specialization preferred from the list of electives offered.
- 5) A Term paper and a Project approved by the Department to be submitted in the fourth year of study.

Every Programme of study shall be designed to have 45-50 theory courses and 20-25 laboratory courses and the distribution of types of courses from the above is indicated in the following table.

Humanities & Social Science, Basic Science and Engineering Science courses	30 -45%
Professional Core courses	45-50%
Professional Elective and Open Elective Courses	10-15%
Major Project / Seminar, etc	5-10%

Note: All components prescribed in the curriculum of any Programme of study shall be conducted and evaluated.

Contact hours: Depending on the complexity and volume of the course, the number of contact hours per week will be determined.

Credits: Credits are assigned to each course as per norms mentioned in the following table.

Subject	Credits
Theory Course (4 Periods/Week) or (4 Periods + 1 Self Study/Week)	03
Theory Course with additional Tutorial Period	04
Laboratory Course (3 Periods/Week)	02
Term paper (2 Periods/Week)	01
Business communication & Presentation Skills Lab (2 Periods/Week)	01
Final year Project (12 Periods/Week)	10



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Transitory Regulations: For students admitted under advance standing (mentioned in 2.3) these transitory regulations will provide the *modus operandi*.

At the time of such admission, based on the Programme pursued (case by case)

- 1) Equivalent courses completed by the student are established by the BOS concerned.
- 2) Marks/Credits are transferred for all such equivalent courses and treated as successfully cleared in the Programme of study prescribed by B.E.C.
- 3) A Programme chart of residual courses not cleared will be derived and a Programme of study with duration specified will be prescribed for pursuit at B.E.C.
- 4) Marks obtained in the previous system if the case be, are converted to grades and CGPA is calculated accordingly.

All other modalities and regulations governing shall be the same as those applicable to the stream of students with whom such a candidate is included into.

Curriculum for each Programme of study:

- 1) The Four year curriculum of any B.Tech Programme of study in any branch of engineering is formulated based on the guidelines mentioned in 5.2 and will be recommended by the Board of Studies concerned and is approved by the Academic Council of the college.
- 2) In the case of students admitted through lateral entry, the respective regular curriculum contents from the second year onwards are to be pursued by such students.
- 3) In the case of students admitted under advanced standing, the Programme curriculum will be prepared by the Board of Studies concerned and the same shall be approved by the Academic Council.
- 4) After approval from the Academic Council, Programme curriculum for the same shall be prepared and made available to all the students along with the academic regulations.

Table below shows a typical curriculum frame work for B.Tech Degree program.

S.No.	Subject Area	Average no. of credits
1.	Humanities & Social Sciences courses	14
2.	Basic Science Courses	35
3.	Engineering Science	32
4.	Professional Core courses	96
5.	Professional Elective Courses	16
6.	Major Project	11
7.	Open Electives	3
	TOTAL	207

The students admitted through the **Lateral Entry scheme** have to complete **155** credits



Bapatla Engineering College:: Bapatla (Autonomous)

The Maximum duration permitted to pursue the programme and cancellation of admission:

The maximum duration permitted for any student to successfully complete any four year B.Tech. Programme of study shall be:

- 1) Eight academic years in sequence from the year of admission for a normal student admitted into the first year of any Programme,
- 2) Six academic years in sequence from the year of admission for a Lateral entry student admitted into the second year of any Programme, and
- 3) For students admitted with advanced standing, the maximum time for completion of Programme study shall be twice the period in terms of academic years in sequence, stipulated in the Programme curriculum defined at the time of admission.

In case, any student fails to meet the applicable conditions for the eligibility of degree in the maximum stipulated period as mentioned in **5.5.1**, his/her admission stands cancelled.

EXAMINATION SYSTEM & EVALUATION:

The performance of the students in each semester shall be assessed course wise. All assessments will be done on absolute mark basis. However, for the purpose of reporting the performance of a candidate, letter grades and grade points will be awarded as per section **11.0**. The performance of a student in each course is assessed with Alternate Assessment Tests, term examinations on a continuous basis during the semester called Continuous Internal Evaluation (CIE) and a Semester End Examination (SEE) conducted at the end of the semester. For each theory, design and/or drawing course, there shall be a comprehensive Semester End Examination (SEE) of three hours duration at the end of each Semester, except where stated otherwise in the detailed Scheme of Instruction.

The distribution of marks between Continuous Internal Evaluation (CIE) and Semester End Examination (SEE) to be conducted at the end of the semester will be as follows:

Nature of the Course	CIE	SEE
Theory subjects	40	60
Drawing	40	60
Practical	40	60
Business communication & presentation Skills Lab	20	30
Term Paper	20	30
Project work	50	100

Continuous Internal Evaluation (CIE) in Theory and Drawing subjects:

1. In each Semester there shall be two Term examinations and two tests from any of the **Alternate Assessment Tools (AAT)** like Home Assignment, Class Test, Problem Solving, Group Discussion, Quiz, Seminar and Field Study in every theory course. The Alternate Assessment Tool with detailed modality of evaluation for



Bapatla Engineering College:: Bapatla (Autonomous)

each course shall be finalized by the teacher concerned before beginning of the course with the permission of HOD concerned and the PRINCIPAL.

The Term Examination is conducted in the regular mode according to a schedule which will be common for a particular year of study. The maximum weightage for Term Examinations, AAT and the calculation of marks for CIE in a theory course is given in the following table.

Weightage for different heads to calculate CIE for 40 marks in a Theory course			
Particulars	Term Exams (Max. 25 marks)	AAT (Max. 10 marks)	Attendance (Max.5 marks)
Better Performed exam	75% of marks obtained	50% of marks obtained	5
Other exam	25% of marks obtained	50% of marks obtained	

2. For drawing courses, there shall be only two Term examinations in a semester with no Alternate Assessment Tool. In case of such courses a maximum of 10 marks shall be given for day-to-day class work and a maximum of 25 marks shall be awarded to the Term examinations taking into account the performance of both the Term examinations giving weightage as prescribed above.
3. A maximum weightage of 5 marks will be given in the CIE for attendance in all theory and drawing courses as indicated in **7.1.1**.

Semester End Examination (SEE) in Theory, Design and/or Drawing course :

- 1) For each theory, design and/or drawing course, there shall be a comprehensive Semester End Examination (SEE) of three hours duration at the end of each Semester for 60 marks, except where stated otherwise in the detailed Scheme of Instruction. Question paper setting shall be entrusted to external examiners from the panels approved by the respective Boards of Studies.
- 2) A minimum of 24 (40%) marks are to be secured exclusively in the Semester End Examination (SEE) of theory, design and/or drawing course and a minimum total of 40 marks in SEE and CIE put together in a theory, design and/or drawing course is to be secured in order to be declared as passed in that course and for the award of the grade in the course.

Continuous Internal Evaluation (CIE) in laboratory courses:

- 1) The evaluation for Laboratory course is based on SEE and CIE. The CIE for 40 marks comprises of 20 marks for day to day laboratory work, 5 marks for record submission and 15 marks for a laboratory examination at the end of the semester.
- 2) In any semester, a minimum of 90 percent of prescribed number of experiments / exercises specified in the syllabi for laboratory course shall be taken up by the students. They shall complete these experiments / exercises in all respects and get the record certified by the internal lab teacher concerned and the Head of the



Bapatla Engineering College:: Bapatla

(Autonomous)

Department concerned to be eligible to appear for the Final Examination in that laboratory course.

Semester End Examination (SEE) in laboratory courses:

- 1) For each laboratory course, the Semester End Examination (SEE) shall be conducted by one internal and one external examiner appointed by the Principal and the duration of the exam shall be for three hours. The SEE is for 60 marks which include 10 marks for write up, 30 marks for lab experiment/exercise, 5 marks for record, and 15 marks for Viva-voce.
- 2) A minimum of 30 (50%) marks shall be obtained in SEE and a minimum total of 40 marks in SEE and CIE put together in a laboratory course are to be secured in order to be declared as passed in the laboratory course and for the award of the grade in that laboratory course.

Evaluation of Term Paper and Business Communication & Presentation Skills Lab:

- 1) A term paper is to be submitted by each student in the 7th semester which would be a precursor to the project work to be done in the 8th semester, and Business Communication & Presentation Skills Lab is to be taken up in the 7th semester. The evaluation is based on CIE for 20 marks, which includes a minimum of two seminars/presentations for 10 marks and the report submitted at the end of the semester which is evaluated for 10 marks.
- 2) The Semester End Examination (SEE) shall be conducted for 30 marks by one internal and one external examiner appointed by the Principal. The SEE contains Viva-voce and the demonstration of the model developed or work performed as a part of the term paper.
- 3) A minimum of 15 (50%) marks shall be obtained in SEE and a minimum total of 20 marks in SEE and CIE put together in the term paper are to be secured in order to be declared as passed in the term paper and for the award of the grade in the term paper.

Evaluation of Project:

- 1) In case of the Project work, the evaluation shall be based on CIE and SEE. The CIE for 50 marks consists of a minimum of two Seminars/ presentations for 25 marks and the Project Report submitted at the end of the semester which is evaluated for 25 marks.
- 2) SEE shall be in the form of a Viva- voce and the demonstration of the thesis work for 100 marks. Viva-voce Examination in Project Work shall be conducted by one internal examiner and one external examiner to be appointed by the Principal. A minimum of 50 marks shall be obtained in SEE exclusively and a minimum total of 60 marks in SEE and CIE put together are to be secured in order to be declared as passed in the Project and for the award of the grade.



Bapatla Engineering College:: Bapatla

(Autonomous)

A student who could not secure a minimum of 50% aggregate marks in CIE of a semester is not eligible to appear for the Semester End Examinations conducted at the end of the semester and shall have to repeat that semester.

NOTE : A student who is absent for any Test / Exam / Seminar / Presentation as a part of Continuous Internal Evaluation (CIE), for any reason whatsoever, shall be deemed to have scored zero marks in the respective component and no provision for make-up shall be provided.

Make-up Test: A student can appear for a Make-up Test in a single theory subject of a semester to improve marks in the Continuous Internal Evaluation (CIE) subject to the following:

If the student becomes eligible to appear for the Semester End Examination (SEE) of a semester and is unable to secure 40% internal marks in a particular theory subject due to genuine reasons, he/she may be given an opportunity to appear for makeup test in any one subject of that semester. The makeup test will be conducted for 40 marks and the marks obtained in this test are final. However, the maximum mark awarded will be 16 only, irrespective of the marks obtained in the makeup test. Such students have to apply by paying a fee prescribed by the institution and submit the application along with a letter of request indicating the genuineness of his/her candidature to be eligible for the makeup test. Applications should be recommended by the HOD concerned and approved by the principal in accordance with the guidelines recommended by the Academic Council.

Course Repetition: The students secured less than 40% in the Continuous Internal Evaluation (CIE) and Semester End Examinations (SEE) may register for the course repetition. The students have to apply to the Principal through the respective HOD by paying prescribed fees. A student can take up a maximum of two courses in a semester immediately after the semester end examinations of that particular semester in accordance with the guidelines recommended by the Academic Council.

The HODs concerned have to allot a teacher related to that course to conduct class work. The minimum number of periods to be conducted should not be less than 50% of the total prescribed periods for that course. The classes will be conducted in the vacation period or in the weekends or in the afternoons as decided by the HOD concerned. Teacher has to evaluate the student for his performance in CIE as per the autonomous norms and students should appear for a semester end examination. The pass criteria in both CIE & SEE should be as per autonomous norms.

ATTENDANCE REGULATIONS:

Regular course of study means a minimum aggregate attendance of 75% in all the courses of study prescribed for a semester in the curriculum, computed by considering total number of hours / periods conducted in all courses as the denominator and the total number of hours / periods actually attended by the student in all courses, as the numerator.



Bapatla Engineering College:: Bapatla

(Autonomous)

7.1.1 A maximum of 5 marks weightage in CIE in each theory/drawing course shall be given for those students who put in a minimum of 75% attendance in the respective theory/drawing course in a graded manner as indicated below:

Attendance of 75% and above but less than 80%	1 mark
Attendance of 80% and above but less than 85%	2 mark
Attendance of 85% and above but less than 90%	3 marks
Attendance of 90% and above	5 marks

Condonation of shortage in attendance may be recommended on genuine medical grounds, up to a maximum of 10%, provided the student puts in at least 65% attendance as calculated in 7.1 above and provided the principal is satisfied with the genuineness of the reasons.

A student, who could not satisfy the minimum attendance requirements, as given above, in any semester, is not eligible to appear for the Semester End examinations and shall have to repeat that semester.

DETENTION: A student is said to have been detained and not allowed to appear for Semester End Examination (SEE) at the end of the semester when

The student does not have a minimum aggregate attendance of 75% attendance or 65% attendance with Condonation in all subjects put together in that semester or the student has not scored a minimum of 50% of marks in CIE in all the courses of that semester put together as per 6.3.

Such a student shall have to repeat the same semester subsequently and satisfy the above requirements afresh to become eligible to appear for the Semester End Examination (SEE), conducted at the end of the semester.

CONDITIONS FOR PROMOTION:

A student not detained in the first semester of a year of study shall be promoted to second semester of that year of study.

A student shall be eligible for promotion to II year of B.Tech. Programme, if he/she is not detained in the second semester of first year B.Tech. Programme irrespective of the number of backlog courses in I year B.Tech.

A student shall be eligible for promotion to III year of B.Tech. Programme, if he/she is not detained in the second semester of II year B.Tech. Programme and has passed all but **three** courses (Including laboratory courses) of I year B.Tech.

A student shall be eligible for promotion to IV year of B.Tech. Programme, if he/she is not detained in the second semester of III year B.Tech. Programme and has passed all but **four** courses (Including laboratory courses) of I & II year B.Tech. put together.

Registration: Every eligible student as mentioned below has to register himself/ herself and obtain **roll number** at the beginning of every semester indicating all the Courses taken up for pursuit by him/her during that Semester.



Bapatla Engineering College:: Bapatla (Autonomous)

The students who are detained as defined in **8.0** should register for the same semester in the subsequent academic year at the beginning of the semester.

The students who are detained for not satisfying the condition for promotion as defined in **9.0** should register for the next semester of the study at the beginning of the semester after getting the eligibility for promotion which is to be confirmed by the controller of the examination.

When a student is debarred for one or more semesters, his/her registration in the present semester is cancelled and the student is debarred from registering in future during the debarred period.

In any case, while re-registering in any semester, he or she will have to pay the requisite fee once again.

GRADING SYSTEM

Based on the student performance during a given semester, a final letter grade will be awarded at the end of the semester for each course. The letter grades and the corresponding grade points are as given in the Table.

Table: Grades & Grade Points

Grade	Grade Points	% of Marks
O	10	90% and above
A+	9	80% – 89%
A	8	70% – 79%
B+	7	60% – 69%
B	6	50% – 59%
C	5	40% – 49%
F	0 (Failed)	Less than 40%

A student who earns a minimum of 5 grade points (C grade) in a course is declared to have successfully completed the course, and is deemed to have earned the credits assigned to that course. **However it should be noted that a pass in any course/term paper/Project shall be governed by the rules mentioned in 6.0.**

GRADE POINT AVERAGE

The Grade Point Average (GPA) will be calculated according to the formula:

$$GPA = \frac{\sum C_i G_i}{\sum C_i}$$

Where C_i = number of credits for the course i ,

G_i = grade points obtained by the student in the course, i .



Bapatla Engineering College:: Bapatla (Autonomous)

Semester Grade Point Average (SGPA) is awarded to candidates considering all the courses of the semester. Zero grade points are also included in this computation.

To arrive at Cumulative Grade Point Average (CGPA), the formula is used considering the student's performance in all the courses taken in all the semesters completed up to the particular point of time.

Example

Semester	Course Code.	Credits	Grade	Grade Point	Credit Points	SGPA	CGPA
I	14MA101	4	C	5	20	7.73 (201/26)	7.73 (201/26)
I	14PH102	3	B	6	18		
I	14CY103	3	A	8	24		
I	14EE104	3	O	10	30		
I	14ES105	3	A+	9	27		
I	14EG106	4	B+	7	28		
I	14CYL101	2	O	10	20		
I	14HWL102	2	A	8	16		
I	14WSL103	2	A+	9	18		
Total		26			201		
II	14MA201	4	A	8	32	7.96 (207/26)	7.84 (408/52)
II	14PH202	3	B	6	18		
II	14CY203	3	A+	9	27		
II	14EL204	3	C	5	15		
II	14EM205	4	O	10	40		
II	14CP206	3	B+	7	21		
II	14PHL201	2	A+	9	18		
II	14ELL202	2	A	8	16		
II	14CPL203	2	O	10	20		
Total		26			207		

ELIGIBILITY FOR AWARD OF B.TECH. DEGREE: A student shall be eligible for award of the B.Tech degree if he/she fulfils all the following conditions:

- 1) Registered and successfully completed all the components prescribed in the Programme of study to which he/she is admitted,
- 2) Obtained CGPA greater than or equal to 5.0 (Minimum requirements for Pass),
- 3) Has no dues to the Institute, hostels, Libraries, NCC/NSS etc., and
- 4) No disciplinary action is pending against him/her.

AWARD OF CLASS: A candidate who becomes eligible for the award of B.Tech. Degree shall be placed in one of the following Classes based on CGPA.



Bapatla Engineering College:: Bapatla

(Autonomous)

Table: CGPA required for award of Degree

Distinction	≥ 8.0*
First Class	≥ 7.0 & < 8.0
Second Class	≥ 6.0 & < 7.0
Pass	≥ 5.0 & < 6.0

* In addition to the required CGPA of 8.0, the student must have necessarily passed all the courses of every semester **in the minimum stipulated period for the Programme.**

Grade Sheet: A grade sheet (Memorandum) will be issued to each student indicating his performance in all courses taken in that semester and also indicating the Grades and SGPA.

Transcripts: After successful completion of the total Programme of study, a Transcript containing performance of all academic years will be issued as a final record. Duplicate transcripts will also be issued if required after the payment of requisite fee. Partial transcript will also be issued up to any point of study to any student on request and by paying the stipulated fee in force.

The Governing Body of B.E.C (Autonomous) has to approve and recommend the same to Acharya Nagarjuna University. The list of students eligible for award of degree

IMPROVEMENT OF CLASS:

A candidate, after becoming eligible for the award of the Degree, may reappear for the Semester End Examination in any of the theory courses as and when conducted, for the purpose of improving the CGPA and the class. But this reappearance shall be within a period of two academic years after becoming eligible for the award of the Degree. However, this facility shall not be availed of by a candidate who has taken the Original Degree Certificate.

Candidates shall not be permitted to reappear either for CIE in any course or for Semester End Examination (SEE) in laboratory courses (including Project Viva-voce) for the purpose of improvement.

16.0 SUPPLEMENTARY EXAMINATIONS: In addition to the Regular Semester End Examinations held at the end of each semester, Supplementary Semester End Examinations will be conducted during the academic year. Candidates taking the Regular / Supplementary examinations as Supplementary candidates may have to take more than one Semester End Examination per day. A student can appear for any number of supplementary examinations till he/she clears all courses which he/she could not clear in the first attempt. However the maximum stipulated period for the course shall not be relaxed under any circumstances.



Bapatla Engineering College:: Bapatla

(Autonomous)

17.0 INSTANT SUPPLEMENTARY EXAMINATIONS: Candidates who fail in one theory course of VIII Semester and has cleared all the subjects till VII semester can appear for Instant Supplementary Examination conducted after declaration of the revaluation results of the said exam.

18.0 MALPRACTICES:

The Principal shall refer the cases of malpractices in Continuous Internal Evaluation (CIE) and Semester End Examination (SEE) to an Enquiry Committee constituted by him / her. The Committee will submit a report on the malpractice allegedly committed by the student to the Principal. The Principal along with the members of the Committee is authorized to award a suitable punishment, if the student is found guilty.

ADDITIONAL ACADEMIC REGULATIONS:

Any attempt to impress upon the teachers, examiners, faculty and staff of Examinations, bribing for either marks or attendance will be treated as malpractice.

When a student is absent for final examination, he/she is treated as to have appeared and obtained zero marks in that component and Grade is awarded accordingly.

When a component of Continuous Internal Evaluation (CIE) or Semester End Examination (SEE) is cancelled as a penalty, he/she is awarded zero marks in that component.

AMENDMENTS TO REGULATIONS:

The Academic Council of Bapatla Engineering College (Autonomous) reserves the right to revise, amend, change or nullify the Regulations, Schemes of Examinations, and/ or Syllabi or any other matter pertained to the academics, society and industry without any notice and the decision is final.



Bapatla Engineering College:: Bapatla

(Autonomous)

SCHEME OF INSTRUCTION & EXAMINATION (Semester System)

For

CH, CS, EI, IT, ME Branches

With Effective from 2016-2017 Academic Year

First Year B.Tech., (SEMESTER – I)

Code No.	Subject	Scheme of Instruction (Periods per week)					Scheme of Examination (Maximum marks)			No. of Credits
		L	T	P	S	Total	CIE	SEE	Total Marks	
14MA101	Engineering Mathematics – I	4	1	0	0	5	40	60	100	4
14PH102	Engineering Physics – I	4	0	0	0	4	40	60	100	3
14CY103	Engineering Chemistry – I	4	0	0	0	4	40	60	100	3
14EE104	Basic Electrical and Electronics Engineering	4	0	0	0	4	40	60	100	3
14ES105	Environmental Studies	4	0	0	0	4	40	60	100	3
14EG106	Engineering Graphics	4	1	0	1	6	40	60	100	4
14CYL101	Chemistry Lab	0	0	3	0	3	40	60	100	2
14HWL102	Hardware Lab	0	0	3	0	3	40	60	100	2
14WSL103	Workshop	0	0	3	0	3	40	60	100	2
	TOTAL	24	2	9	1	36	360	540	900	26

CIE: Continuous Internal Evaluation

L: Lecture

T: Tutorial

SEE: Semester End Examination

P: Practical

S: Self Study



Bapatla Engineering College:: Bapatla

(Autonomous)

SCHEME OF INSTRUCTION & EXAMINATION (Semester System)

For

CH, CS, EI, IT, ME Branches

With Effective from 2016-2017 Academic Year

First Year B.Tech, (SEMESTER – II)

Code No.	Subject	Scheme of Instruction (Periods per week)					Scheme of Examination (Maximum marks)			No. of Credits
		L	T	P	S	Total	CIE	SEE	Total Marks	
14MA201	Engineering Mathematics – II	4	1	0	0	5	40	60	100	4
14PH202	Engineering Physics – II	4	0	0	0	4	40	60	100	3
14CY203	Engineering Chemistry – II	4	0	0	0	4	40	60	100	3
14EL204	Communicative English	4	0	0	0	4	40	60	100	3
14EM205	Engineering Mechanics	4	1	0	0	5	40	60	100	4
14CP206	Problem Solving with Programming	4	0	0	1	5	40	60	100	3
14PHL201	Physics lab	0	0	3	0	3	40	60	100	2
14ELL202	English Communication Skills Lab	0	0	3	0	3	40	60	100	2
14CPL203	Problem Solving with Programming Lab	0	0	3	0	3	40	60	100	2
	TOTAL	24	2	9	1	36	360	540	900	26

CIE: Continuous Internal Evaluation

L: Lecture

T: Tutorial

SEE: Semester End Examination

P: Practical

S: Self Study



Bapatla Engineering College:: Bapatla

(Autonomous)

SCHEME OF INSTRUCTION & EXAMINATION (Semester System)
First Year B.Tech. (SEMESTER – I)
For
CE, EC & EE Branches
With Effect From 2016-2017 Academic Year

Code No.	Subject	Scheme of Instruction (Periods per week)					Scheme of Examination (Maximum marks)			No. of Credits
		L	T	P	S	Total	CIE	SEE	Total Marks	
14MA101	Engineering Mathematics – I	4	1	0	0	5	40	60	100	4
14PH102	Engineering Physics – I	4	0	0	0	4	40	60	100	3
14CY103	Engineering Chemistry – I	4	0	0	0	4	40	60	100	3
14EL104	Communicative English	4	0	0	0	4	40	60	100	3
14EM105	Engineering Mechanics	4	1	0	0	5	40	60	100	4
14CP106	Problem Solving with Programming	4	0	0	1	5	40	60	100	3
14PHL101	Physics lab	0	0	3	0	3	40	60	100	2
14ELL102	English Communication Skills Lab	0	0	3	0	3	40	60	100	2
14CPL103	Problem Solving with Programming Lab	0	0	3	0	3	40	60	100	2
	TOTAL	24	2	9	1	36	360	540	900	26

CIE: Continuous Internal Evaluation
L: Lecture

T: Tutorial

SEE: Semester End Examination
P: Practical

S: Self Study



Bapatla Engineering College:: Bapatla (Autonomous)

SCHEME OF INSTRUCTION & EXAMINATION (Semester System)

First Year B.Tech., (SEMESTER – II)

For

CE, EC & EE Branches

With Effect From 2016-2017 Academic Year

Code No.	Subject	Scheme of Instruction (Periods per week)					Scheme of Examination (Maximum marks)			No. of Credits
		L	T	P	S	Total	CIE	SEE	Total Marks	
14MA201	Engineering Mathematics – II	4	1	0	0	5	40	60	100	4
14PH202	Engineering Physics – II	4	0	0	0	4	40	60	100	3
14CY203	Engineering Chemistry – II	4	0	0	0	4	40	60	100	3
14EE204	Basic Electrical and Electronics Engineering	4	0	0	0	4	40	60	100	3
14ES205	Environmental Studies	4	0	0	0	4	40	60	100	3
14EG206	Engineering Graphics	4	1	0	1	6	40	60	100	4
14CYL201	Chemistry Lab	0	0	3	0	3	40	60	100	2
14HWL202	Hardware Lab	0	0	3	0	3	40	60	100	2
14WSL203	Workshop	0	0	3	0	3	40	60	100	2
	TOTAL	24	2	9	1	36	360	540	900	26

CIE: Continuous Internal Evaluation
L: Lecture

T: Tutorial

SEE: Semester End Examination
P: Practical

S: Self Study



Bapatla Engineering College:: Bapatla (Autonomous)

Engineering Mathematics – I
(Common for all branches)
I B.Tech – I Semester (Code: 14MA101)

Lectures	4	Tutorial	1	Practical	0	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT - I

Matrix Algebra: Rank of a Matrix, Linear Independence, Vector Space, Solutions of Linear Systems, Inverse of a Matrix by Gauss-Jordan Elimination, Vector Spaces, Inner Product Spaces, Linear Transformations. Eigen Values, Eigen Vectors, Some applications of Eigen value problems. Symmetric, Skew-Symmetric and Orthogonal Matrices.

UNIT II

Matrix Algebra: Complex Matrices: Hermitian, Skew-Hermitian and Unitary, Similarity of Matrices, Basis of Eigen Vectors, Diagonalization.

Differential Calculus: Rolle's Theorem, Lagrange's Mean Value Theorem and Taylor's Theorem (without Proofs), Taylor's and, Maclaurin's Series for functions of one variable. Maxima and Minima of functions of Two Variables, Lagrange's method of Multipliers.

UNIT III

Fourier Series: Periodic Functions, Trigonometric Series, Fourier Series, Functions of Any Period $P = 2L$, Even and Odd Functions, Half Range Expansions, Complex Fourier Series.

UNIT IV

Integral Calculus: Evaluation of double integrals (Cartesian & Polar), Changing the order of integration, Evaluation of triple integrals, Applications of triple integrals to find area and volume.

TEXT BOOK:

1. Erwin Kreyszig, "Advanced Engineering Mathematics", 9th edition, John Wiley & Sons.

REFERENCE BOOKS:

1. "Advanced Engineering Mathematics", Peter V. O'Neil, Thomson Brooks/Cole.
2. "Advanced Calculus", Murray R Spiegel, Schaum's outline series.



Bapatla Engineering College:: Bapatla

(Autonomous)

Engineering Physics – I
(Common for all branches)
I B.Tech – I Semester (Code: 14PH102)

Lectures	4	Tutorial	0	Practical	0	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT – I

OPTICS:

INTERFERENCE: Coherence, spatial and temporal coherences, interference due to thin films(reflected system), cosine law, anti-reflection coating, Michelson interferometer and its applications, (determination of wavelengths of monochromatic light and resolution of two nearby wavelengths)., Newton's rings theory and applications(determination of wavelength of light, and refractive index of transparent liquid).

DIFFRACTION: Fresnel & Fraunhofer diffraction, Fraunhofer diffraction due to single slit, plane diffraction grating, dispersive and resolving powers of a grating.

POLARISATION: Introduction, double refraction, Nicol prism, quarter wave plate, half wave plate, production and detection of circularly and elliptically polarised lights and optical activity, Electro optic effect(Kerr effect), Magneto optic effect(Faraday effect).

UNIT II

LASERS & FIBER OPTICS:

LASERS: Properties of lasers, Spontaneous and stimulated emissions, Population inversion, Solid state (Ruby) laser, Gas(He-Ne) laser, semiconductor (Ga-As) laser, Applications.

HOLOGRAPHY: Principle, recording and reproduction of holography, Applications.

FIBER OPTICS: Structure and types of optical fibers, acceptance angle, Numerical aperture, losses in optical fibers, fiber optic communication and its advantages.

UNIT III

ELECTRICITY & MAGNETISM:

Gauss's law in static electricity (qualitative only), Gauss's law of magnetism, circulating charges, Cyclotron-construction, working and limitations, Hall effect and its applications, displacement current, Maxwell's equations (qualitative treatment), E M oscillations, velocity of EM waves, energy transport and the pointing vector, AC circuit containing series LCR circuit-resonance condition and quality factor.



Bapatla Engineering College:: Bapatla

(Autonomous)

UNIT IV

MODERN PHYSICS:

Dual nature of light, de-Broglie's concept of matter waves, Davisson-Germer electron diffraction experiment, Heisenberg's uncertainty principle and applications (non-existence of electron in a nucleus and finite width of spectral lines), one dimensional time- independent and dependent Schrödinger wave equations, physical significance of wave function, applications of time-independent Schrödinger wave equation to particle in a box(one dimensional), tunneling, the scanning tunneling microscope.

TEXT BOOK:

1. "A Text Book of Engineering Physics", M.N. Avadhanulu, P.G. Kshirasagar, S.Chand & Co.,(Edition – 2013).

REFERENCE BOOKS:

2. "Engineering physics" by R.K.Gour and S.L.Gupta. Dhanpat raipublications.
3. "Basic Engineering Physics" by P.Srinivasa rao & K.Muralidhar,Himalaya publications.
4. "Engineering physics" by M.R.Sreenivasan. New age international publications
5. "Engineering physics" by Palani swamy. Scitech publications



Bapatla Engineering College:: Bapatla (Autonomous)

Engineering Chemistry – I
(Common for all branches)
I B.Tech – I Semester (Code: 14CY103)

Lectures	4	Tutorial	0	Practical	0	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT I: Water Technology: (Industrial Purpose) 13 periods

Characteristics: Alkalinity – types of alkalinity and determination (Including simple problems); **Hardness** – types, units and estimation by EDTA method (Including simple problems)

Boiler feed water - Scales, Sludges, Caustic embrittlement, boiler corrosion, Priming and foaming;

Internal conditioning - phosphate, calgon and carbonate methods

External conditioning - Ion exchange process, Lime Soda process (Including simple problems)

UNIT II: 12 periods

Domestic water treatment – WHO Guidelines, Potable water, Sedimentation, Coagulation, Filtration (Slow sand filter) and disinfection methods: Chlorination - break point chlorination, ozonization, UV treatment.

Desalination: Electro Dialysis and Reverse Osmosis.

Phase rule

Statement and explanation of terms involved; One component system – water system; Condensed phase rule, Thermal analysis - Thermal behavior of pure and impure solids, Eutectic system, Eutectic mixture & Eutectic point, Construction of phase diagram for Bi-Cd system by thermal analysis, Simple eutectic systems (lead-silver system only).

UNIT III: Energy Sources (Fuels) 13 periods

Classification of fuels; Calorific value of fuels (lower, higher)

Solid fuels: determination of calorific value (Bomb Calorimeter), Coal ranking, Carbonization of coal (Otto-Hoffman by-product method); Proximate and ultimate analysis of coal.

Petroleum based: Petroleum processing and fractions; Cracking – catalytic cracking method (fixed bed); Synthetic petrol: Bergius process, Knocking and anti- knocking Agents, Octane number and Cetane number;

Gaseous fuels: CNG and LPG,

UNIT IV: Engineering Materials 12 Periods



Bapatla Engineering College:: Bapatla

(Autonomous)

Refractories: Classification – Acidic, Basic and Neutral refractories; Properties: refractoriness, refractoriness under load, dimensional stability, porosity, thermal spalling; Preparation, Properties and applications of alumina, magnesite and zirconia bricks,

Composites: Introduction Constituents of Composites, types- Fibre reinforced Particulate and Layered composites and their applications.

Lubricants: Mechanism of lubrication, Liquid lubricants - properties: viscosity index, flash and fire points, cloud and pour points, oiliness; Solid lubricants - graphite and molybdenum sulphide.

TOTAL: 50 PERIODS

TEXT BOOKS:

1. P.C. Jain and Monica Jain, "Engineering Chemistry" Dhanpat Rai Pub, Co., New Delhi 15th edition (2010).

REFERENCES:

- 1 Essential Of Physical Chemistry by Arun Bahl, B.S. Bahl, G.D.Tuli, by Arun Bahl, B.S. Bahl, G.D.Tuli, Published by S Chand Publishers
- 2 Text Book of Engineering Chemistry by C.P. Murthy, C.V. Agarwal, A. Naidu B.S. Publications, Hyderabad (2006).
- 3 Engineering Chemistry by K. Maheswaramma, Pearson publishers 2015.



Bapatla Engineering College:: Bapatla (Autonomous)

Basic Electrical and Electronics Engineering (Common for all branches)

I B.Tech – I Semester (Code: 14EE204 / 14EE104)

Lectures	4	Tutorial	0	Practical	0	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT – I

Basic Concepts of Electric Circuits: Introduction, Electric Current, Ohm's Law, Work, Power, and Energy, Dynamically Induced EMF and Statically Induced EMF, Self-induced EMF and Mutually Induced EMF, Self-inductance of a Coil, Mutual Inductance, Energy Stored in a Magnetic Field, Electrical Circuit Elements, Energy Stored in a Capacitor, Capacitor in Parallel and in Series.

DC Networks and Network Theorems: DC Network Terminologies, Voltage and Current Sources, Series Parallel Circuits, Voltage and Current Divider Rules, Kirchhoff's Laws, Maxwell's Mesh Current Method, Nodal Voltage Method (Nodal Analysis), Network Theorems (Superposition Theorem, Thevenin's Theorem, Norton's Theorem).

UNIT – II

AC Fundamentals: Introduction, Generation of Alternating Voltage in an Elementary Generator, Concept of Frequency, Cycle, Time Period, Instantaneous Value, Average Value, and Maximum Value, Sinusoidal and Non-sinusoidal Wave Forms, Concept of Average Value and Root Mean Square (RMS) Value of an Alternating Quantity, Analytical Method of Calculation of RMS Value, Average Value, and Form Factor, RMS and Average Values of Half-wave rectified Alternating Quantity, Concept of Phase and Phase Difference.

Transformers: Introduction, Basic Principle and Constructional Details, EMF Equation.

UNIT – III

Semiconductor Devices: Introduction, Review of Atomic Theory, Binding Forces Between Atoms in Semiconductor Materials, Extrinsic Semiconductors, Semiconductor Diodes; Volt-ampere Characteristic of a Diode, An Ideal Diode, Diode Parameters and Diode Ratings, Zener Diode; Zener Diode As Voltage Regulator, Zener Diode As a Reference Voltage, Bipolar Junction Transistors; Working of a n-p-n Transistor, Working of a p-n-p Transistor, Transistor Configurations, Transistor As an Amplifier, Transistor As a Switch, Rectifiers and Other Diode Circuits.

Rectifiers: Introduction, Half-Wave, Full wave Rectifiers and their analysis, Comparison of Half-Wave and Full-Wave Rectifiers.

UNIT – IV

Digital Electronics: Introduction, Number System, Octal Number System, Hexadecimal Number System, Application of Binary Numbers in Computers, Logic Gates, Boolean Algebra,



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De Morgan's Theorem, Combinational Circuits, Simplification of Boolean Expressions Using De Morgan's Theorem.

Integrated Circuits: Introduction, Fabrication of Monolithic ICs, Hybrid Integrated Circuits, Linear and Digital ICs.

TEXT BOOK: "Basic Electrical and Electronics Engineering", S.K. Bhattacharya, Pearson Publications

REFERENCE BOOKS:

1. "Basic Electrical, Electronics and Computer Engineering", Muthusubramanian R, Salivahanan S and Muraleedharan K A, Tata McGraw Hill, Second Edition, (2006).
2. "Basics of Electrical and Electronics Engineering", Nagsarkar T K and Sukhija M S, Oxford press University Press.



Bapatla Engineering College:: Bapatla (Autonomous)

Environmental Studies

(Common for all branches)

I B.Tech – I Semester (Code: 14ES205 / 14ES105)

Lectures	4	Tutorial	0	Practical	0	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT – I

Introduction: Definition, Scope and Importance, Need for public awareness. Ecosystems: Definition, Structure and Functions of Ecosystems, types - Forest, Grassland, Desert, Aquatic (Marine, pond and estuaries).

Biodiversity: Definition and levels of Biodiversity; Values of Biodiversity - Consumptive, Productive, Social, Aesthetic, Ethical and Optional; Threats and Conservation of Biodiversity; Hot Spots of Biodiversity, Bio-geographical Classification of India, India as a mega diversity nation.

UNIT – II

Natural resources: Land: Land as a resource, Causes and effects of land degradation - Soil erosion, Desertification. Forest: Use of forests, Causes and effects of deforestation, Afforestation, Mining - benefits and problems. Water: Uses, floods and drought, Dams - benefits and problems. Energy: Importance of energy, Renewable and Non renewable energy resources.

Sustainability: Definition, Concept and Equitable use of resources for sustainable development; Rain water harvesting and Watershed management.

UNIT – III

Pollution: Definition; Causes, effects and control of air, water and nuclear pollution; Solid Waste: urban, Industrial and hazardous wastes; Integrated waste management - 3R approach, composting and vermicomposting.

Environmental issues: Green house effect & Global warming, Ozone layer depletion, Acid rains, Green Revolution, Population Growth and environmental quality, Environmental Impact Assessment.

UNIT – IV

Environmental acts: Water and air (Prevention and Control of pollution) acts, Environmental protection act, Forest Conservation act. Case Studies: Silent Valley Project, Chipko movement, Narmada Bachao Andolan, Bhopal Gas Tragedy, Mathura Refinery and TajMahal, Chernobyl Nuclear Disaster and Ralegan Siddhi (Anna Hazare).



Bapatla Engineering College:: Bapatla

(Autonomous)

Field work: Visit to a local area to document environmental assets – Pond/Forest/Grassland.
Visit to a local polluted site- Urban and industry/ Rural and Agriculture.

TEXT BOOKS:

1. "Environmental Studies" by Benny Joseph, Tata McGraw-Hill Publishing Company Limited, New Delhi.
2. "Comprehensive environmental studies"- JP Sharma, Laxmi Publications.

REFERENCE BOOKS:

1. "Environmental studies", R.Rajagopalan, Oxford University Press.
2. "Introduction to Environmental Science", Anjaneyulu Y, B S Publications
3. "Environmental Science", 11th Edition – Thomson Series – By Jr. G. Tyler Miller.



Bapatla Engineering College:: Bapatla (Autonomous)

Problem Solving with Programming (Common for all branches)

I B.Tech – I Semester (Code: 14CP106 / 14CP206)

Lectures	4	Tutorial	0	Practical	0	Self Study	1
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT – I

Basics and Introduction to C, The C Declarations, Operators and Expressions, Input and Output in C, Decision Statements, **Programming Exercises for Unit I:** C-expressions for algebraic expressions, evaluation of arithmetic and Boolean expressions. Syntactic errors in a given program, output of a given program, values of variables at the end of execution of a program fragment, filling the blanks in a given program. Programs using Scientific and Engineering formulae. Finding the largest of the three given numbers. Computation of discount amount on different types of products with different discount percentages. Finding the class of an input character, finding the type of triangle formed with the given sides, computation of income-tax, computation of electricity bill and conversion of lower case character to its upper case.

UNIT – II

Loop Control, Data Structure: Array, **Programming Exercises for Unit – II:** To print the sum of the digits of a given number and to display the image of a given number. To find whether a given number is prime, printing Fibonacci sequence and to find prime factors of a given number. To print graphic patterns of symbols and numbers and computation of statistical parameters of a given list of numbers. To find the length of a string, compare strings, reverse a string, copy a string and to find whether the given string is palindrome or not. Transpose of a matrix, product and sum of matrices and sorting of names using arrays.

UNIT – III

Strings and Standard Functions, Pointers, Dynamic Memory Allocation and Linked List: Dynamic Memory Allocation, Memory Models, Memory Allocation Functions. Functions, Storage Class, **Programming Exercises for Unit - III:** Functions - Insertion sort, Linear search. Recursive functions to find factorial & GCD (Greatest Common Divisor), string operations using pointers and pointer arithmetic and dynamic memory allocation. Swapping two variable values. Sorting a list of names using array of pointers.

UNIT – IV

Preprocessor Directives: Introduction, The #define Directive, Undefined a Macro, Token Pasting and Stringizing Operators, The #include Directive, Conditional Compilation, The #ifndef Directive.

Structure and Union, Files, **Programming Exercises for Unit - IV:** Operations on complex numbers, matrix operations with the matrix and the size of the matrix as a structure, sorting a list of student records on register number using array of pointers and to read an input file of marks and generate a result file, sorting a list of names using command line arguments.



Bapatla Engineering College:: Bapatla

(Autonomous)

TEXT BOOK:

1. Ashok N.Kamthane, "Programming in C", PEARSON 2nd Edition.

REFERENCE BOOKS:

1. Kernighan BW and Dennis Ritchie M, "C programming language", 2nded, Prentice Hall.
2. Yashavant P. Kanetkar, "Let us C", BPB Publications.
3. E.Balagurusamy, "Programming in ANSI C", 4thed, Tata Mcgraw-Hill.
4. Herbert Schildt, "C: The Complete Reference", 4th edition, Tata Mcgraw-Hill.



Bapatla Engineering College:: Bapatla (Autonomous)

Physics Laboratory
(Common for all branches)
I B.Tech – I Semester (Code: 14PHL101 / 14PHL201)

Lectures	0	Tutorial	0	Practical	3	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

LIST OF EXPERIMENTS

1. Determination of acceleration due to gravity at a place using compound pendulum.
2. Study the variation of intensity of magnetic field along the axis of a circular coil using Stewart-Gee's apparatus.
3. Determination of thickness of thin wire using air wedge interference bands.
4. Determination of radius of curvature of a Plano convex lens by forming Newton's rings.
5. Determination of wavelengths of mercury spectrum using grating normal incidence method.
6. Determination of dispersive power of a given material of prism using prism minimum deviation method.
7. Draw the resonant characteristic curves of L.C.R. series circuit and calculate the resonant frequency.
8. Draw the characteristic curves of a photocell and calculate the maximum velocity of electron.
9. Verify the laws of transverse vibration of stretched string using sonometer.
10. Determine the rigidity modulus of the given material of the wire using Torsional pendulum.
11. Draw the load characteristic curves of a solar cell.
12. Determination of Hall coefficient of a semiconductor.
13. Determination of voltage and frequency of an A.C. signal using C.R.O.
14. Determination of Forbidden energy gap of Si & Ge.
15. Determination of wavelength of laser source using Diode laser.

TEXT BOOK:

1. "Engineering physics laboratory manual" P.Srinivasa rao & K.Muralidhar, Himalaya publications.



Bapatla Engineering College:: Bapatla (Autonomous)

Hardware Laboratory
(Common for all branches)
I B.Tech – I Semester (Code: 14HWL102 / 14HWL202)

Lectures	0	Tutorial	0	Practical	3	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

LIST OF EXPERIMENTS

1. Identification and testing of various electronic components. (Resistors, Inductor, Capacitor, Transistor, ICs and Bread board)
2. Study of Oscilloscope, Function generator, Power supply and Multimeter.
3. KCL & KVL verification for simple circuits on Bread board.
4. Study of Ceiling fan.
5. Study of Florescent lamp.
6. Study of Single Phase Transformer.
7. Identifying all parts of computers.
8. Install and Uninstall system and application software.
9. Assembling a Computer.
10. Connecting computers in a network.



Bapatla Engineering College:: Bapatla (Autonomous)

Problem Solving with Programming Laboratory
(Common for all branches)
I B.Tech – I Semester (Code: 14CPL103 / 14CPL203)

Lectures	0	Tutorial	0	Practical	3	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

LIST OF EXPERIMENTS

1. A program for electricity bill taking different categories of users, different slabs in each category. (Using nested if else statement).

Domestic Customer:		
Consumption Units	Rate of Charges(Rs.)	
0 – 200	0.50 per unit	
201 – 400	100 plus	0.65 per unit
401 – 600	230 plus	0.80 per unit
601 and above	390 plus	1.00 per unit
Commercial Customer:		
Consumption Units	Rate of Charges(Rs.)	
0 – 50	0.50 per unit	
100 – 200	50 plus	0.6 per unit
201 – 300	100 plus	0.70 per unit
301 and above	200 plus	1.00 per unit

2. Write a C program to evaluate the following (using loops):
 - a) $1 + x^2/2! + x^4/4! + \dots$ upto ten terms
 - b) $x + x^3/3! + x^5/5! + \dots$ upto 7 digit accuracy
3. Write a C program to check whether the given number is
 - a) Prime or not.
 - b) Perfect or Abundant or Deficient.
4. Write a C program to display statistical parameters (using one – dimensional array).
 - a) Mean
 - b) Mode
 - c) Median
 - d) Variance.
5. Write a C program to read a list of numbers and perform the following operations
 - a) Print the list.
 - b) Delete duplicates from the list.
 - c) Reverse the list.
6. Write a C program to read a list of numbers and search for a given number using Binary search algorithm and if found display its index otherwise display the message "Element not found in the List".



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(Autonomous)

7. Write a C program to read two matrices and compute their sum and product.
8. A menu driven program with options (using array of character pointers).
 - a) To insert a student name
 - b) To delete a student name
 - c) To print the names of students
9. Write a C program to read list of student names and perform the following operations
 - a) To print the list of names.
 - b) To sort them in ascending order.
 - c) To print the list after sorting.
10. Write a C program that consists of recursive functions to
 - a) Find factorial of a given number
 - b) Solve towers of Hanoi with three towers (A, B & C) and three disks initially on tower A.
11. A Bookshop maintains the inventory of books that are being sold at the shop. The list includes details such as author, title, price, publisher and stock position. Whenever a customer wants a book the sales person inputs the title and the author, and the system searches the list and displays whether it is available or not. If it is not, an appropriate message is displayed, if it is, then the system displays the book details and request for the number of copies required ,if the requested copies are available the total cost of the requested copies is displayed otherwise the message "required copies not in stock" is displayed. Write a program for the above in structures with suitable functions.
12. Write a C program to read a data file of students' records with fields(Regno, Name, M1,M2,M3,M4,M5) and write the successful students data (percentage > 40%) to a data file.



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Engineering Mathematics – II
(Common for all branches)
I B.Tech – II Semester (Code: 14MA201)

Lectures	4	Tutorial	1	Practical	0	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT – I

First Order Differential Equations: Basic concepts, Geometrical meaning, Separable Differential Equations, Exact Differential Equations, Integrating Factors, Linear Differential Equations, Bernoulli's Equation, Orthogonal Trajectories of curves, Some Engineering Applications: Growth-Decay and Newton's Law of Cooling.

UNIT – II

Linear Differential Equations of Second Order: Homogeneous Linear Equations of Second Order, Second Order Homogeneous Equations with Constant Coefficients, Case of Complex Roots, Euler-Cauchy Equations, Non-Homogeneous Equations, Solution by Undetermined Coefficients, Solution by Variation of Parameters, Applications-Modeling of Electric Circuits.

UNIT – III

Laplace Transforms: Laplace Transform, Inverse Transform, Linearity, Shifting, Transforms of Derivatives and Integrals, Differential Equations, Unit Step Function, Second Shifting Theorem, Dirac's Delta Function, Convolution theorem (without proof).

UNIT – IV

Vector calculus: Scalar and vector point functions, Gradient of a scalar field, Directional derivative, Divergence of a vector field, curl of a vector field, Line integrals, Line integrals independent of path, Green's theorem in the plane (without proof), Surface integrals, Triple integrals, Divergence theorem of Gauss (without proof), Applications to Engineering problems, Stokes theorem (without proof).

TEXT BOOK:

1. "Advanced Engineering Mathematics", Erwin Kreyszig, 9th edition, John Wiley & Sons.

REFERENCE BOOK:

1. "Advanced Engineering Mathematics", Peter V. O'Neil, Thomsons Brooks/Cole.



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Engineering Physics – II
(Common for all branches)
I B.Tech – II Semester (Code: 14PH202)

Lectures	4	Tutorial	0	Practical	0	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT – I

Electron theory of solids & semiconductor physics:

Electron theory of solids: Failure of classical free electron theory, quantum free electron theory, Fermi-Dirac distribution and its temperature dependence, Kronig-Penny model (Qualitative), effective mass of electron, concepts of energy band gap and hole.

Semiconductor physics: Classification of semiconductors, density of states, carrier concentration in intrinsic and extrinsic semiconductors, law of mass action, conductivity in semiconductors (drift and diffusion), Equation of continuity, P-N junction diode and its V-I characteristics.

UNIT – II

Magnetic, Dielectric and Ferro-electric materials:

Origin of magnetic moment of an atom, Bohr magneton, Domain theory of Ferro magnetism, Curie-Weiss law (Qualitative), Hysteresis curve, soft and hard magnetic materials, ferrites and its applications.

Dielectric materials: Types of polarizations, internal field (qualitative), Clausius – Mossotti equation, Frequency dependence of polarization, Ferroelectrics and its applications, strength of dielectrics and dielectric breakdown.

UNIT – III

Advanced materials:

Nano-materials: Introduction to nano-materials, surface to volume ratio, quantum confinement, properties of nano materials, Fabrication of nano-materials (CVD and sol-gel methods), carbon nano tubes and its properties, Applications of nano materials.

Superconductivity: Critical temperature, critical magnetic field and critical current. Meissner effect, type-I and type-II superconductors, attractive interactions, qualitative treatment of BCS theory and, Josephson's junction, Applications of superconductors.

Opto-electronic devices: Working and applications of solar cell, LED, LCD, Photo Diode.

UNIT – IV

Analytical techniques:

Nuclear techniques: Radio isotopes and its applications (Medical and Industrial), GM-counter, scintillation counter.

Ultrasonics: Properties of ultrasonics, General applications of ultrasonics.



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Medical applications: Cardiology and Ultrasonic imaging.

Industrial applications: NDT (Pulse echo technique) and cavitation effect. Time of flight diffraction technique.

Structure determination: Crystal lattices (Bravais), and planes, Miller indices, Bragg's law, structural analysis of crystals using X-Ray powder diffraction method.

TEXT BOOK:

1. "A Text Book of Engineering Physics", M.N.Avadhanulu & P. Krushisagar, S.Chand Publication., (Edition – 2013).

REFERENCE BOOKS:

2. "Engineering physics" by R.K.Gour and S.L.Gupta. Dhanpat raipublications.
3. "Basic Engineering Physics" by P.Srinivasa rao & K.Muralidhar, Himalaya publications.
4. "Engineering physics" by M.R.Sreenivasan. New age international publications.
5. "Engineering physics" by Palani swamy. Scitech publications.



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Engineering Chemistry – II (Common for all branches) I B.Tech – II Semester (Code: 14CY203)

Lectures	4	Tutorial	0	Practical	0	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT I:

Polymers:

12 periods

Introduction, polymerization: types – addition and condensation polymerization; Mechanism of free radical addition polymerization with suitable example; Polymer Tacticity and Ziegler Natta polymerization (mechanism).

Plastics: Classification (Thermoplastic and thermosetting); Preparation, properties and uses of PVC, Teflon, Bakelite, Nylon-6,6.

Rubbers: Natural rubber, drawbacks of raw rubber, Vulcanization of rubber; Synthetic rubbers: Buna-S, Buna-N and Poly urethane.

UNIT II

Electro Chemistry

13 periods

Electrode potential, Determination of single electrode potential; Nernst equation (problems); Electrochemical series – significance; Electro chemical cells, Reversible and irreversible cells, Reference electrodes – Standard Hydrogen electrode, Calomel electrode, Ion selective electrode (glass electrode) – measurement of pH;

Solar cells: Introduction, Solar Panels, Applications;

Fuel Cells: Hydrogen – Oxygen Fuel Cell;

Batteries: Lead – acid, NiCad and Lithium Batteries.

UNIT III: Corrosion and Corrosion Control

13 periods

Corrosion: Types of corrosion - Chemical or dry corrosion, Pilling – Bedworth rule; Electrochemical or wet corrosion; Galvanic corrosion, pitting, stress and differential aeration corrosion; factors influencing corrosion;

Corrosion control – sacrificial anodic method and impressed current cathodic methods, corrosion inhibitors; Protective coatings: Metallic coatings – electro plating (Au) and electroless plating (Ni). Paints – constituents and functions,

Green Chemistry: Principles and applications of green chemistry, Integrated Waste Management (IWM), Zero Waste Technologies (ZWT), green auditing, green solvents, green catalysts, green energies.



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UNIT-IV: Analytical Techniques periods

12

Beer-Lambert's law; **Colorimetry**: principle, instrumentation (with block diagram) and Estimation of iron, **Flame photometry**: principle, instrumentation (with block diagram) and estimation of sodium; **Atomic Absorption Spectroscopy**: principle, instrumentation (with block diagram) and estimation of nickel.

Conductometric titrations (Acid-Base) and Potentiometric titrations (Redox titrations – Fe^{2+} vs dichromate).

TOTAL: 50 PERIODS

TEXT BOOKS:

1. P.C. Jain and Monica Jain, "Engineering Chemistry" Dhanpat Rai Pub, Co., New Delhi 15th edition (2010).

REFERENCES:

1. S.S. Dara & Mukkanti K. "A text book of engineering chemistry" S. Chand & Co. Ltd., New Delhi (2006).
2. B. Sivasankar "Engineering Chemistry" Tata McGraw Hills co., New Delhi (2008).
3. Dr. B. K. Sharma, Instrumental methods of analysis, Krishna Prakashan Media, 2000.



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Communicative English (Common for all branches)

I B.Tech – II Semester (Code: 14EL204 / 14EL104)

Lectures	4	Tutorial	0	Practical	0	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT-I

- Text:** **Unit- I** Going Places: Travel
Unit-II Reaching Out: Mass Media
- Grammar:** Review of Parts of Speech, Concord
- Writing:** Mind Mapping, Paragraph Writing : Structure, Development & Types
- Vocabulary** from the suggested units (Given List)

UNIT- II

- Text:** **Unit-III** Ushering in a New Era: Networking
Unit-IV Inspiring Minds: Successful People
- Grammar:** Tenses, Conditionals
- Writing:** Essay Writing: Descriptive, Argumentative, Imaginative, Narrative
- Vocabulary** from the suggested units (Given List)

UNIT- III

- Text:** **Unit-V** Morphed Universe: Technology as a double Edged Sword
Unit-VI The Indomitable Human Spirit: Facing Disasters
- Grammar:** Articles, Reported Speech, Voices
- Writing:** Letter Writing (Inquiry, Complaint & Request Letters) & Summarizing
- Vocabulary** from the suggested units (Given List)

UNIT- IV

- Text:** **Unit-VII** Getting Job Ready: Interview Skills
Unit-VIII The World of Work: The Corporate Experience
- Grammar:** Common Errors
- Writing:** Note Making, Technical Report Writing
- Vocabulary** from the suggested unit (Given List)

Prescribed Text

Dr Elango, Dr Veena Selvam, Dr Priyadarshini Sujatha (2013): Resonance: English for Engineers and Technologists, CUP.

References:

Michael Swan (2003): Practical English Usage, CUP.

Stephen, McLaren (2003): Easy Writer Student's Guide to Writing Essays and Reports, New Delhi, Viva Books Pvt.

Raymond Murphy (2012): English Grammar in Use (Fourth Edition), CUP.

Lina Mukhopadhyay (2013): English for Jobseekers, CUP.

R.C Sharma (2010): Business Correspondence and Report writing (Fourth Edition), Tata Mc Graw Hill.



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Engineering Mechanics (Common for all branches)

I B.Tech – II Semester (Code: 14EM105 / 14EM205)

Lectures	4	Tutorial	1	Practical	0	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT – I

Concurrent Forces in a Plane: Principles of statics – Composition and resolution of forces – Equilibrium of concurrent forces in a plane – Method of moments.

Parallel Forces in a Plane: Two parallel forces – General case of parallel forces in a plane – Center of parallel forces – Centroids of composite plane figures and curves

UNIT – II

Moments of Inertia of Plane Figures: Moment of inertia of a plane figure with respect to an axis in its plane – Moment of Inertia with respect to an axis perpendicular to the plane of the figure – Parallel axis theorem

General Case of Forces in a Plane: Composition of forces in a plane – Equilibrium of forces in a plane – Plane trusses: method of joints.

UNIT – III

Friction: Characteristics of friction – problems involving dry friction

Rectilinear Translation: Kinematics of rectilinear motion – principles of dynamics – Differential equations of rectilinear motion D'Alembert's principle – momentum and impulse – work and energy – ideal systems: conservation of energy

UNIT – IV

Curvilinear Translation: Kinematics of curvilinear motion – Differential equations of curvilinear motion – D'Alembert's principle – Work and Energy.

Moments of Inertia of Material Bodies: Moment of inertia of a rigid body – Moment of inertia of a lamina – Moments of inertia of three – dimensional bodies.

Rotation of a Rigid Body about a Fixed Axis: Kinematics of rotation – Equation of motion for a rigid body rotating about a fixed axis – D'Alembert's principle

TEXT BOOK

1. Engineering Mechanics by S. Timoshenko and D. H. Young – Mc Graw-Hill International Edition (For concepts and symbolic problems)
2. Engineering mechanics statics and dynamics by A. K. Tayal – Umesh publication, Delhi (For numerical problems using S.I. system of units)



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REFERENCE BOOKS

1. Vector mechanics for Engineers-Statics and Dynamics by Beer and Johnston, Tata Mc Graw-Hill publishing company, New Delhi
2. Engineering Mechanics-Statics and Dynamics by R. C. Hibbeler and Ashok Gupta - Pearson (For numerical problems using S.I. system of units)



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Engineering Graphics
(Common for all branches)
I B.Tech – II Semester (Code: 14EG206 / 14EG106)

Lectures	4	Tutorial	1	Practical	0	Self Study	1
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT – I

INTRODUCTION: Introduction to Drawing instruments and their uses, geometrical construction procedures.

CURVES: Conic sections – general construction methods for ellipse, parabola and hyperbola. Other methods to construct ellipse only, cycloid, involute of a circle.

UNIT – II

METHOD OF PROJECTIONS: Principles of projection - First angle and third angle projection of points. Projection of straight lines. Traces of lines.

UNIT – III

PROJECTIONS OF PLANES: Projections of plane figures: circle, square, rhombus, rectangle, triangle, pentagon and hexagon.

UNIT – IV

PROJECTIONS OF SOLIDS: Projections of Cubes, Prisms, Pyramids, Cylinders and Cones with varying positions.

UNIT – V

ISOMETRIC PROJECTIONS: Isometric Projection and conversion of Orthographic views into isometric views. (Treatment is limited to simple objects only).

ORTHOGRAPHIC PROJECTIONS: Conversion of pictorial views into Orthographic views. (Treatment is limited to simple castings).

TEXT BOOK:

1. "Engineering Drawing" by N.D. Bhatt & V.M. Panchal. (Charotar Publishing House, Anand). (First angle projection)

REFERENCE BOOKS:

2. "Engineering Drawing" by Dhananjay A Jolhe, Tata McGraw hill publishers
3. "Engineering Drawing" by Prof.K.L.Narayana& Prof. R.K.Kannaiah.



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Chemistry Laboratory (Common for all branches)

I B.Tech – II Semester (Code: 14CYL201 / 14CYL101)

Lectures	0	Tutorial	0	Practical	3	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

LIST OF EXPERIMENTS

- 1. Introduction to Chemistry Lab** (the teachers are expected to teach fundamentals like Calibration of Volumetric Apparatus, Primary, Secondary Solutions, Normality, Molarity, Molality etc. and error, accuracy, precision, theory of indicators, use of volumetric titrations).
- 2. Volumetric Analysis:**
 - a. Estimation of Washing Soda.
 - b. Estimation of Active Chlorine Content in Bleaching Powder
 - c. Estimation of Mohr's salt by permanganometry.
 - d. Estimation of Magnesium by EDTA method
- 3. Analysis of Water:**
 - a. Determination of Alkalinity of Tap water.
 - b. Determination of Total Hardness of ground water sample by EDTA method
 - c. Determination of Salinity of water sample
- 4. Estimation of properties of oil:**
 - a. Estimation of Acid Number
 - b. Estimation of Saponification value
- 5. Preparations:**
 - a. Preparation of Soap
 - b. Preparation of Urea-formaldehyde resin
 - c. Preparation of Phenyl benzoate
- 6. Demonstration Experiments (Any two of the following):**

Determination of p^H of given sample by different methods.
Determination of conductivity of given sample by conductometer.

TEXT BOOKS (for Chemistry 1 and 2):

1. Practical Engineering Chemistry by K.Mukkanti, Etal, B.S. Publicaitons, Hyderabad.
2. Inorganic quantitative analysis, Vogel.

REFERENCE BOOKS:

1. Text Book of engineering chemistry by R.n. Goyal and Harmendra Goel.
2. A text book on experiments and calculations- Engineering Chemistry. S.S. Dara.
3. Instrumental methods of chemical analysis, Chatwal, Anand, Himalaya Publications.



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English Communication Skills Laboratory
(Common for all branches)

I B.Tech – II Semester (Code: 14ELL202 / 14ELL102)

Lectures	0	Tutorial	0	Practical	3	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

UNIT-I: Functional English

Introducing Yourself & Others-Greeting & Parting-Congratulating-Giving Suggestions & Advices-Expressing Opinions-Inviting People-Requesting-Seeking Permission-Giving Information- Giving Directions- Sympathizing-Convincing People-Complaining-Apologizing-Thanking Others- Shopping- Travelling- Conversational Gambits.

UNIT-II

Phonetics (Oral drills) - Stress- Rhythm & Intonation.

UNIT-III Vocabulary Development & Oratory Skills

Classified Vocabulary- Idioms - Phrasal verbs - Words often confused- Analogous words- Corporate Words - JAM- Elocution- Debate.

UNIT-IV Manners and Etiquette

Giving & Receiving Feedback -Telephone Etiquette - Gender Sensitive Language.

Reference Books:

O' Connor (1984): Better English pronunciation Cambridge

University Press Jack C Richards (2015): New Interchange (4rth Edition)
, CUP.

Grant Taylor (2001: English Conversation Practice, Mc Graw Hill.

Micheal Mc Carthy, Felicity O Dell (1994): English Vocabulary in Use, CUP.

Software:

Buzzers for conversations, New Interchange series

English in Mind series, telephoning in English

Speech Solutions, A course in Listening and Speaking



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Face to Face series



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Workshop
(Common for all branches)
I B.Tech – II Semester (Code: 14WSL203 / 14WSL103)

Lectures	0	Tutorial	0	Practical	3	Self Study	0
Continuous Internal Assessment	:	40	Semester End Examination (3 Hours)	:	60		

LIST OF EXPERIMENTS

1. Carpentry

- a. Half Lap joint
- b. Dovetail joint
- c. Mortise & Tenon joint

2. Welding using electric arc welding process/gas welding

- a. Lap joint
- b. Tee joint
- c. Butt joint

3. Sheet metal operations with hand tools

- a. Trapezoidal tray
- b. Funnel
- c. T-joint

4. House wiring

- a. To control one lamp by a single switch
- b. To control two lamps by a single switch
- c. Stair-case wiring



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(Autonomous)

DISCIPLINE AND CODE OF CONDUCT FOR STUDENTS

The following are some of the important rules of discipline. All students are required to be aware of and act consistently with these values.

1. Students must punctually attend all lectures, practicals, tutorials, assignments, tests, examinations, etc. A student whose attendance and/or progress in the various tests and examinations are not satisfactory and who does not perform the required number of assignments, tutorials and/or practicals are likely to lose their terms. Prolonged absence even on ground of ill health may also lead to loss of terms. Defaulters will not be sent up for Final /University Examinations.
2. The identity card is meant for identifying bonafied students and is used for permitting the students to participate in various activities and programs of the college. Every student must wear Identity card as long as he/she is in the college campus. It must be produced by the student whenever demanded by the member of the teaching or non-teaching staff of the college. Every student must wear his/her Identity card in the college every day. He/She must take proper care of it to avoid its misuse by other students and outsiders. In case the Identity card is lost, the matter should be immediately reported to the Principal and an application should be made for a duplicate Identity card, which will be issued on payment of charges.
3. The conduct of the students in the classes and in the premises of the college shall be such as will cause no disturbance to teachers, fellow students or other classes.
4. Every student shall wear a clean formal dress while coming to the college also when representing the college for various activities out station.
5. No Society or Association shall be formed in the College and no person should be invited in the college campus without the specific permission of the Principal.
6. No student is allowed to display any Notice/Circular/Poster/Banner in the College premises without the prior permission of the Principal.
7. No student will be allowed to conduct any political activity in the college premises.
8. Outsiders are not permitted in the college premises without the prior permission of the Principal. College students are not allowed to bring their relatives/friends to the college premises without the permission of the principal.
9. All meetings, cultural programs, debates, elocutions etc. organized on the college premises must be held in presence of teaching staff members and with the prior permission of the Principal. The subjects of debates/elocutions must have the prior approval of the principal.



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10. Students must take proper care of the college property. Strict action will be taken against students damaging College property and will be required to compensate the damage.
11. Students should not be involved in academic offences including cheating or plagiarism in academic course work malpractices at the College/Board/University Examinations
12. Smoking is strictly prohibited in the college premises.
13. If, for any reason, the continuance of a student in the College is found detrimental to the best interest of the college, the Management may ask the student to leave the college without assigning any reasons and the decision will be final and binding on the student.
14. Playing music on Transistors, Tape-Recorders, Car Stereos, Mobile phones or any other similar gadgets with or without earphones is strictly prohibited in the college premises. Defaulters will be punished and their instrument shall be confiscated.
15. Use of Mobile phones is strictly prohibited in the academic area of the college, Defaulters will be penalized and their instrument confiscated.
16. Students who are travelling to college on personal vehicles (2/4 wheelers) need to have valid driving license issued by RTO and follow all the rules listed by RTO. Students have to park the vehicle in the parking area of the college.
17. Students must not hang around in the college premises while the classes are at work.
18. Students must not attend classes other than their own without the permission of the authority concerned.
19. Students shall do nothing inside or outside the college that will interface with the discipline of the college or tarnish the image of the college.
20. Students are not allowed to communicate any information about college matters to Press.
21. Matters not covered above will be decided at the discretion of the Principal.

Acts of misbehavior, misconduct, indiscipline or violation of the Rules of Discipline mentioned above liable for one more punishments as stated below:

- A. Warning to the students.
- B. Warning to the student as well as inform the parents.
- C. Imposition of a fine.
- D. Denial of gymkhana, library, laboratory, N.C.C., N.S.S. student aid or any other facility for a specified period or for the whole Term/Year.
- E. Expulsion from College for a specified period
- F. Cancellation of Terms.
- G. Refusal of admission in the term or academic year.
- H. Cancellation of admission.
- I. Rustication.



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(Autonomous)

Anti Ragging Rules and Regulations (As per AICTE Norms)

1. **What constitutes Ragging:** - Ragging constitutes one or more of any of the following acts:

- a. any conduct by any student or students whether by words spoken or written or by an act which has the effect of teasing, treating or handling with rudeness a fresher or any other student;
- b. indulging in rowdy or undisciplined activities by any student or students which causes or is likely to cause annoyance, hardship, physical or psychological harm or to raise fear or apprehension thereof in any fresher or any other student;
- c. asking any student to do any act which such student will not in the ordinary course do and which has the effect of causing or generating a sense of shame, or torment or embarrassment so as to adversely affect the physique or psyche of such fresher or any other student;
- d. any act by a senior student that prevents, disrupts or disturbs the regular academic activity of any other student or a fresher;
- e. exploiting the services of a fresher or any other student for completing the academic tasks assigned to an individual or a group of students.
- f. any act of financial extortion or forceful expenditure burden put on a fresher or any other student by students;
- g. any act of physical abuse including all variants of it: sexual abuse, homosexual assaults, stripping, forcing obscene and lewd acts, gestures, causing bodily harm or any other danger to health or person;
- h. any act or abuse by spoken words, emails, posts, public insults which would also include deriving perverted pleasure, vicarious or sadistic thrill from actively or passively participating in the discomfiture to fresher or any other student;
- i. any act that affects the mental health and self-confidence of a fresher or any other student with or without an intent to derive a sadistic pleasure or showing off power, authority or superiority by a student over any fresher or any other student.



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(Autonomous)

Actions to be taken against students for indulging and abetting ragging in technical institutions Universities including Deemed to be University imparting technical education:-

1. The punishment to be meted out to the persons indulged in ragging has to be exemplary and justifiably harsh to act as a deterrent against recurrence of such incidents.
2. Every single incident of ragging a First Information Report (FIR) must be filed without exception by the institutional authorities with the local police authorities.
3. The Anti-Ragging Committee of the institution shall take an appropriate decision, with regard to punishment or otherwise, depending on the facts of each incident of ragging and nature and gravity of the incident of ragging.
4. a) Depending upon the nature and gravity of the offence as established the possible punishments for those found guilty of ragging at the institution level shall be any one or any combination of the following:-
 - (i) Cancellation of admission
 - (ii) Suspension from attending classes
 - (iii) Withholding/withdrawing scholarship/fellowship and other benefits
 - (iv) Debarring from appearing in any test/examination or other evaluation process
 - (v) Withholding results
 - (vi) Debarring from representing the institution in any regional, national or international meet, tournament, youth festival, etc.
 - (vii) Suspension/expulsion from the hostel
 - (viii) Rustication from the institution for period ranging from 1 to 4 semesters
 - (ix) Expulsion from the institution and consequent debarring from admission to any other institution.
 - (x) Collective punishment: when the persons committing or abetting the crime of ragging are not identified, the institution shall resort to collective punishment as a deterrent to ensure community pressure on the potential raggars.



Bapatla Engineering College:: Bapatla (Autonomous)

Important Contact Numbers (In case of Ragging)

Sl.No.	Member Category	Name of the Member	Phone No
1.	Principal	Dr. N. Sudhakar, M.Tech., Ph.D	9440730035
2.	HODs: Chemical Engg. Civil Engg. CSE ECE EEE EIE IT Mechanical Engg. M.C.A. Mathematics Physics Chemistry English T& P Warden, Campus Hostel	Dr. J.S.Rao, M.Tech., Ph.D Dr. Ch.Naga Satish Kumar, M.Tech., Ph.D Prof. V.Chakradhar, M.Tech., (Ph.D) Dr. B.Chandramohan, M.Tech., Ph.D Smt.N Rama Devi, M.Tech., (Ph.D) Prof. Ch.Ramesh M.Tech., (Ph.D) Prof. N.Sivarama Prasad, M.Tech., (Ph.D) Dr. M.Venkateswara Rao, M.Tech., Ph.D Sri K.N.Prasad, M.C.A.,M.Tech., Dr. P.Vijaya Saradhi, M.Sc.,M.Phil., Ph.D Dr. K.Ramakrishna, M.Sc., Ph.D Dr. V.Madhava Rao, M.Sc., Ph.D Dr.P. Asha Madhavi, M.A.,M.Phil.,Ph.D Mr. D.Narayana Chowdary, M.Tech.,(Ph.D) Dr. T. Chandrasekhara Rao	9490224100 9440110124 9490449894 9491112477 (08643)224244-Ext:165 9701407595 9885882200 9441012134 8121708069 9949559288 9441207751 8374498399 9951507742 9441129993 9848276672
4.	District Crime Stopper SP Control Room, Guntur SP Camp Office DSP, Bapatla CI, Bapatla Town CI, Bapatla Rural SI, Bapatla Town SI, Bapatla Rural Ragging Toll Free		1090 08632234901 08632246000 9440796165 9440796171 9440796221 9052625926 9440796258 18001805522

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