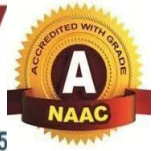# J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY

An Autonomous Institution • Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Recognized 2(f) Status by UGC • Accredited by NAAC with 'A' Grade • ISO 9001:2015 Certified Institution
T.N.PALAYAM (PO), GOBI (TK), ERODE (DT), TAMILNADU, INDIA – 638 506 | www.jkkmct.edu.in | 04285 260754 / 260755
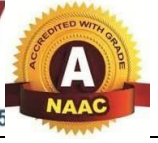
Regulations 2024 (UG)

Curriculum and Syllabus

CHOICE BASED CREDIT SYSTEM

B.E - CIVIL ENGINEERING

For the Students Admitted from the

Academic year 2024-2025

TABLE OF CONTENTS

INSTITUTION

VISION	• To create and mould students as engineers with adequate core and interdisciplinary knowledge and skills for the welfare of mankind and society through quality education for students with value added education and Ethical values.
MISSION	• To mould our students in the attainment of professional competence for coping with the rapid and challenging advancements in technologies and the ever changing world of business, industry and services. • To help and guide our students in their personal growth shaping them into mature and responsible individuals. • Providing rigorous academic knowledge to the students through high quality education, training models and research activities. • Providing platform to the students for holistic development with participation in co-curricular and extracurricular activities

DEPARTMENT

VISION	• To empower a future where sustainable education and innovative infrastructure unite communities, enrich lives and foster a world of limitless possibility.
MISSION	• Our Mission is to educate students from all over India, including those from the local and rural areas, so that they become enlightened individuals, improving the living standards of their families, industry and society. • We provide individual attention and world class quality of education and equip the youth with knowledge and training that will improve their employability and pave way for their gainful employment eventually leading to the development of the society as a whole.

I. PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

Graduates can

1. Knowledge in Civil Engineering: Graduates shall attain state of the art knowledge in the various fields of Civil Engineering and will take every opportunity coming their way to augment the already existing knowledge.

2. Successful in career: Graduates shall achieve successful career which they will be able to commit to with responsibility and passion.

3. Commitment to society: Graduates shall display a high sense of social responsibility and ethical thinking and suggest sustainable engineering solutions.
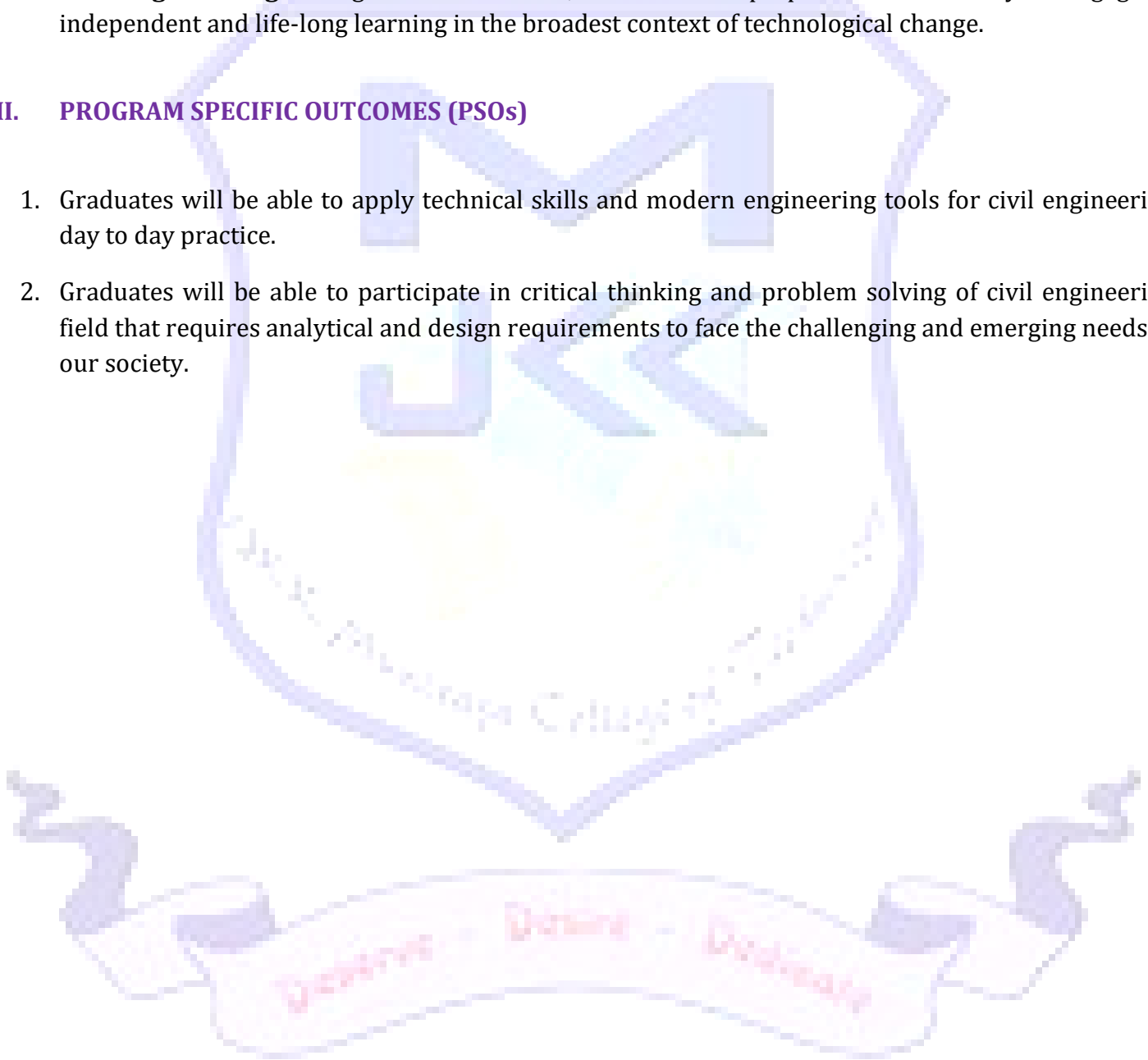
II. PROGRAM OUTCOMES (POs)

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

III.   PROGRAM SPECIFIC OUTCOMES (PSOs)

1. Graduates will be able to apply technical skills and modern engineering tools for civil engineering day to day practice.

2. Graduates will be able to participate in critical thinking and problem solving of civil engineering field that requires analytical and design requirements to face the challenging and emerging needs of our society.

Mapping of Course Outcome and Programme Outcome

YEAR	SEM	COURSE NAME	PO												PSO		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
YEAR I	SEMESTER I	Technical English - I	-	-	-	2	-	1	-	-	2	3	-	3	-	-	-
		Matrices and Calculus	3	3	1	1	-	-	-	-	2	-	2	3	-	-	-
		Engineering Physics	3	3	2	1	2	-	-	-	-	-	-	1	-	-	-
		Engineering Chemistry	3	2	2	1	1	2	3	-	-	-	-	1	-	-	-
		Fundamentals of computing & Programming C laboratory	2	3	3	3	2	-	-	-	-	-	2	2	3	3	3
		தமிழர் மரபு /Heritage of Tamils	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Programming C Laboratory	2	3	3	3	2	-	-	-	-	-	2	2	3	3	3
		Physics and Chemistry Laboratory	3	3	1	1	-	-	-	-	-	-	-	-	-	-	-
			3	2	1	-	1	3	2	1	-	-	-	1	-	-	-
		Communication Skill Laboratory I	-	-	-	-	-	-	-	1	3	3	-	2	-	-	-
	SEMESTER II	Technical English - II	-	1	1	-	-	-	1	1	2	3	-	2	-	-	-
		Statistics & Numerical Methods	3	3	1	1	1	-	-	-	2	-	2	3	-	-	-
		Material Science	3	2	2	1	2	2	2	-	-	-	-	1	-	-	-
		Engineering Graphics	3	1	2	-	2	-	-	-	-	3	-	-	3	3	2
		Basic Electrical and Electronics Engineering	3	3	2	2	-	-	-	-	-	1	-	-	-	-	-
		தமிழரும் தொழில்நுட்பமும் /Tamils and Technology	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Engineering Practices Laboratory	3	2	-	-	1	1	1	-	-	-	-	2	-	-	-
		Basic Electrical and Electronics Engineering Laboratory	3	3	2	2	-	-	-	-	-	1	-	-	-	-	-
		Communication Skill Laboratory I	-	-	2	-	-	-	-	1	3	3	-	3	-	-	

1 - low, 2 - medium, 3 - high, '-' - no correlation

Mapping of Course Outcome and Programme Outcome

Year	Sem	Course name	PO												PSO		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
YEAR II	SEMESTER III	Transforms and Partial Differential Equations	3	3	1	1	-	-	-	-	2	-	-	3	-	-	-
		Engineering Mechanics	3	2	3	1	2	-	-	-	-	-	-	2	3	1	2
		Fluid Mechanics	3	2	3	2	1	2	2	1	1	1	1	2	3	3	3
		Construction Materials and Technology	2	2	1	2	1	1	2	-	1	-	2	2	3	2	2
		Water Supply and Wastewater Engineering	3	3	3	2	2	3	3	2	2	2	2	3	3	2	2
		Surveying and Levelling	3	2	3	2	3	3	2	2	2	-	2	2	3	3	3
		Surveying and Levelling Laboratory	3	2	3	3	3	3	3	3	3	3	3	1	3	3	3
		Water and Wastewater Analysis Laboratory	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2
		Professional Development															
	SEMESTER IV	Applied Hydraulics Engineering	3	3	2	3	1	2	2	1	2	1	1	3	3	2	3
		Strength of Materials	3	3	3	3	2	3	1	3	2	3	1	3	3	3	3
		Concrete Technology	3	1	2	2	1	3	3	2	1	1	1	2	3	2	3
		Soil Mechanics	3	3	2	2	2	1	1	1	2	1	2	3	2	2	3
		Highway and Railway Engineering	2	3	3	2	2	3	2	3	2	1	3	3	3	3	2
		Environmental Sciences and Sustainability	3	2	1	1	-	2	2	-	-	-	-	2	-	-	-
		Hydraulic Engineering Laboratory	3	3	2	3	1	2	2	1	2	1	1	2	3	2	1
		Materials Testing Laboratory	3	3	2	3	1	2	2	1	3	1	1	2	3	2	2
		Soil Mechanics Laboratory	1	2	3	3	1	1	1	1	3	1	1	3	2	3	3

			PO												PSO		
Year	**Sem**	**Course name**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
YEAR III	SEMESTER V	Design of Reinforced cement concrete Elements	3	3	1	1	-	-	-	-	2	-	-	3	-	-	-
		Structural Analysis I	3	2	3	1	2	-	-	-	-	-	-	2	3	1	2
		Foundation Engineering	3	2	3	2	1	2	2	1	1	1	1	2	3	3	3
		Professional Elective I	2	2	1	2	1	1	2	-	1	-	2	2	3	2	2
		Professional Elective II	3	3	3	2	2	3	3	2	2	2	2	3	3	2	2
		Professional Elective III	3	2	3	2	3	3	2	2	2	-	2	2	3	3	3
		Highway Engineering Laboratory	3	2	3	3	3	3	3	3	3	3	3	1	3	3	3
		Irrigation and Environmental Drawing	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2
		Survey Camp															
		Attitude Skills															
	SEMESTER VI	Design of Steel Structural Elements	3	3	2	3	1	2	2	1	2	1	1	3	3	2	3
		Structural Analysis II	3	3	3	3	2	3	1	3	2	3	1	3	3	3	3
		Engineering Geology	3	1	2	2	1	3	3	2	1	1	1	2	3	2	3
		Professional Elective IV	3	3	2	2	2	1	1	1	2	1	2	3	2	2	3
		Professional Elective V	2	3	3	2	2	3	2	3	2	1	3	3	3	3	2
		Open Elective I	3	2	1	1	-	2	2	-	-	-	-	2	-	-	-
		Building Drawing and Detailing Laboratory	3	3	2	3	1	2	2	1	2	1	1	2	3	2	1
		Mini Project	3	3	2	3	1	2	2	1	3	1	1	2	3	2	2

Mapping of Course Outcome and Programme Outcome

Mapping of Course Outcome and Programme Outcome

Year	Sem	Course name	PO												PSO		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
YEAR IV	SEMESTER VII	Estimation, Costing and Valuation Engineering	3	3	1	1	-	-	-	-	2	-	-	3	-	-	-
		Hydrology and Water Resource Engineering	3	2	3	1	2	-	-	-	-	-	-	2	3	1	2
		Human Values Ethics	3	2	3	2	1	2	2	1	1	1	1	2	3	3	3
		Total Quality Management	2	2	1	2	1	1	2	-	1	-	2	2	3	2	2
		Professional Elective IV	3	3	3	2	2	3	3	2	2	2	2	3	3	2	2
		Open Elective II	3	2	3	2	3	3	2	2	2	-	2	2	3	3	3
		Design Project	3	2	3	3	3	3	3	3	3	3	3	1	3	3	3
		Comprehensive Test & Viva Voce	2	2	2	2	2	2	2	3	2	2	2	3	2	2	2
	SEMESTER VIII	**Project work**	3	3	2	3	1	2	2	1	2	1	1	3	3	2	3
		Summer Internship	3	3	3	3	2	3	1	3	2	3	1	3	3	3	3

SUMMARY OF CREDITS

S.NO	Course Category	Credits per Semester								Total Credits	Credits in %	Credits as per AU Curriculum	Credits as per AICTE Model Curriculum
		I	II	III	IV	V	VI	VII	VIII				
1	HSS	4	4	-	-	-	-		-	8	4.74	12	12
2	BS	11.5	7	4		-	-	-	-	22.5	13.32	25	26
3	ES	4.5	10.5	3	2	-	-	-	-	20	11.83	19	29
4	PC	-	-	16	21	14	11	11	-	73	43.19	65	47
5	PE	-	-	-	-	9	6	3	-	18	10.65	18	23
6	OE	-	-	-	-	-	3	2	-	6	3.55	12	11
7	EEC	1	1	1	1	1	1.5	3	11	21.5	12.72	15	12
Total Credits/ Semester		**21**	**22.5**	**24**	**24**	**24**	**21.5**	**19**	**11**	**169**	**100**	**166**	**160**

CATEGORIZATION OF COURSES

    i.   Continuous Internal Assessment (CIA)

    ii.   Continuous Assessment Marks (CAM)

    iii.   End Semester Examination (ESE)

    iv.   Humanities and Social Sciences including Management Courses (HSS)

    v.   Basic Science Courses (BS)

    vi.   Engineering Science Courses (ES)

    vii.   Professional Core Courses (PC)

    viii.   Professional Elective Courses (PE)

    ix.   Open Elective Courses (OE)

    x.   Mandatory Courses (MC)

    xi.   Employability Enhancement Courses (EEC)

    xii.   Other Courses (OC)

    xiii.   Undergraduate (UG)

    xiv.   Anna university, Chennai, India

    xv.   J.K.K.Munirajah College of Technology, T.N.Palayam

ENROLLMENT FOR B.E. / B. TECH. (HONOURS) / MINOR DEGREE (OPTIONAL)

A student can also optionally register for additional courses (18 credits) and become eligible for the award of B.E. / B. Tech. (Honours) or Minor Degree.

For B.E. / B. Tech. (Honours), a student shall register for the additional courses (18 credits) from semester V onwards. These courses shall be from the same vertical or a combination of different verticals of the same programme of study only.

For minor degree, a student shall register for the additional courses (18 credits) from semester V onwards. All these courses have to be in a particular vertical from any one of the other programmes.

J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY
(Autonomous)
Thookkanaickenpalayam, Erode -638455

Regulation 2024 (UG)
Curriculum and Syllabus
BE - Civil Engineering

SEMESTER I

S.No	Course Code	Course Title	Category	Periods / Week L	T	P	Total Contact Period	Credits	Max.Marks CIA	ESE	TM
INDUCTION PROGRAM												
1.	24IP101	Induction Programme		**TWO WEEKS TO THREE WEEKS**								
THEORY												
2.	24EN101	Technical English - I	HSS	3	0	0	3	**3**	40	60	100
3.	24MA102	Matrices and Differential Calculus	BS	3	1	0	4	**4**	40	60	100
4.	24PH103	Engineering Physics	BS	3	0	0	3	**3**	40	60	100
5.	24CY104	Engineering Chemistry	BS	3	0	0	3	**3**	40	60	100
6.	24CS105	Fundamentals of Computing & Programming in C	ES	3	0	0	3	**3**	40	60	100
7.	24TA106	□□□□□ □□□□ /Heritage of Tamils	HSS	1	0	0	1	**1**	40	60	100
PRACTICAL'S												
8.	24CS108	Programming in C Laboratory	ES	0	0	4	4	**2**	60	40	100
9.	24PC109	Physics and Chemistry Laboratory	BS	0	0	4	4	**2**	60	40	100
EMPLOYABILITY ENHANCEMENT COURSES												
10.	24EN110	Communication Skill Laboratory I	EEC	0	0	2	2	**1**	100	0	100
		TOTAL		16	1	8	25	**22**			

J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY
(Autonomous)
Thookkanaicken palayam, Erode -638455
Regulation 2024 (UG)
Curriculum and Syllabus
B.E - Civil Engineering

SEMESTER II

S.No	Course Code	Course Title	Category	L	T	P	Total Contact Period	Credits	CIA	ESE	TM
				Periods / Week					**Max.Marks**		
THEORY											
1.	24EN201	Technical English - II	HSS	3	0	0	3	3	40	60	100
2.	24MA202	Statistics and Numerical Methods	BS	3	1	0	4	4	40	60	100
3.	24PH205	Material Science	BS	3	0	0	3	3	40	60	100
4.	24GE204	Engineering Graphics	ES	0	4	0	4	4	40	60	100
5.	24EE201	Basic Electrical and Electronics Engineering	ES	3	0	0	3	3	40	60	100
6.	24TA206	□□□□□□□□ □□□□□□□□□□□□□□□□ /Tamils and Technology	HSS	1	0	0	1	1	40	60	100
PRACTICALS											
7.	24EE202	Basic Electrical and Electronics Engineering Laboratory	ES	0	0	4	4	2	60	40	100
8.	24EP203	Engineering Practices Laboratory	ES	0	0	4	4	2	60	40	100
EMPLOYABILITY ENHANCEMENT COURSES											
9.	24EN210	Communication Skill Laboratory II	EEC	0	0	2	2	1	100	0	100
			Total	13	5	9	27	23			

J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY
(Autonomous)
Thookkanaickenpalayam, Erode -638455

Regulation 2024 (UG)
Curriculum and Syllabus
B.E - Civil Engineering

SEMESTER III

S.No	Course Code	Course Title	Category	L	T	P	Total Contact Period	Credits	CIA	ESE	TM
				Periods / Week					Max.Marks		
THEORY											
1.	24MA304	Transforms and Partial Differential Equations	BS	3	1	0	4	**4**	40	60	100
2.	24ME304	Engineering Mechanics	ES	3	0	0	3	**3**	40	60	100
3.	24CE301	Fluid Mechanics	PC	3	0	0	3	**3**	40	60	100
4.	24CE302	Construction Materials and Technology	PC	3	0	0	3	**3**	40	60	100
5.	24CE303	Water Supply and Wastewater Engineering	PC	4	0	0	4	**4**	40	60	100
6.	24CE304	Surveying and Leveling	PC	3	0	0	3	**3**	40	60	100
PRACTICAL'S											
7.	24CE305	Surveying and Leveling Laboratory	PC	0	0	3	3	**1.5**	60	40	100
8.	24CE306	Water and Wastewater Analysis Laboratory	PC	0	0	3	3	**1.5**	60	40	100
EMPLOYABILITY ENHANCEMENT COURSES											
9.	24GE308	Soft Skills and Effective Communication	EEC	1	0	0	1	**1**	100	0	100
			Total	20	1	6	27	**24**			

J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY
(Autonomous)
Thookkanaickenpalayam, Erode -638455

Regulation 2024 (UG)
Curriculum and Syllabus
B.E - Civil Engineering

SEMESTER IV

S.No	Course Code	Course Title	Category	L	T	P	Total Contact Period	Credits	CIA	ESE	TM
				Periods / Week					Max. Marks		
THEORY											
1.	24CE401	Applied Hydraulics Engineering	PC	3	1	0	4	**4**	40	60	100
2.	24CE402	Strength of Materials	PC	3	0	0	3	**3**	40	60	100
3.	24CE403	Concrete Technology	PC	3	0	0	3	**3**	40	60	100
4.	24CE404	Soil Mechanics	PC	3	0	0	3	**3**	40	60	100
5.	24CE405	Engineering Geology	PC	3	0	0	3	**3**	40	60	100
6.	24GE405	Environmental Sciences and Sustainability	ES	2	0	0	2	**2**	40	60	100
PRACTICAL'S											
7.	24CE406	Hydraulic Engineering Laboratory	PC	0	0	3	3	**1.5**	60	40	100
8.	24CE407	Materials Testing Laboratory	PC	0	0	4	4	**2**	60	40	100
9.	24CE408	Soil Mechanics Laboratory	PC	0	0	3	3	**1.5**	60	40	100
EMPLOYABILITY ENHANCEMENT COURSES											
10.	24GE409	Personality Development	EEC	1	0	0	1	**1**	100	0	100
		Total		18	1	10	29	**24**			

& **Soft and Analytical Skills – I is a Non-credit Course**

& **Mandatory Course-I is a Non-credit Course (Student shall select one course from thelist given under Mandatory Course-II)**

J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY
(Autonomous)
Thookkanaickenpalayam, Erode -638455

Regulation 2024 (UG)
Curriculum and Syllabus
B.E - Civil Engineering

SEMESTER V

S.No	Course Code	Course Title	Category	Periods / Week			Total Contact Period	Credits	Max.Marks		
				L	T	P			CIA	ESE	TM
THEORY											
1.	24CE501	Design of Reinforced cement Concrete Elements	PC	3	2	0	5	4	40	60	100
2.	24CE502	Structural Analysis I	PC	3	0	0	3	3	40	60	100
3.	24CE503	Foundation Engineering	PC	3	0	0	3	3	40	60	100
4.		Professional Elective I*	PE	3	0	0	3	3	40	60	100
5.		Professional Elective II*	PE	3	0	0	3	3	40	60	100
6.		Professional Elective III*	PE	3	0	0	3	3	40	60	100
PRACTICALS											
7.	24CE504	Highway Engineering Laboratory	PC	0	0	4	4	2	60	40	100
8.	24CE505	Irrigation and Environmental Engineering Drawing	PC	0	0	4	4	2	60	40	100
9.	24CE506	Survey Camp	PC	0	0	0	2	0	100	0	100
EMPLOYABILITY ENHANCEMENT COURSES											
10.	24GE507	Aptitude Skills	EEC	0	1	0	1	1	100	0	100
MANDATOTY COURSES											
11.	24MC1	Mandatory course I**	MC	3	0	0	3	0	100	0	100
			Total	21	3	8	34	24			

* Professional Elective – I to III shall be chosen from the list of Professional electives (Verticals) offered by same Programme

** Mandatory course 1 shall be chosen from the list of Mandatory course – Non credit course

J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY
(Autonomous)
Thookkanaickenpalayam, Erode -638455
Regulation 2024 (UG)
Curriculum and Syllabus
B.E - Civil Engineering

SEMESTER VI

S.No	Course Code	Course Title	Category	L	T	P	Total Contact Period	Credits	CIA	ESE	TM
				\multicolumn{3}{}{Periods / Week}			\multicolumn{3}{}{Max.Marks}		
THEORY											
1.	24CE601	Design of steel structural elements	PC	3	0	0	3	3	40	60	100
2.	24CE602	Structural Analysis II	PC	3	0	0	3	3	40	60	100
3.	24CE603	Engineering Geology	PC	3	0	0	3	3	40	60	100
4.		Professional Elective IV *	PE	3	0	0	3	3	40	60	100
5.		Professional Elective V *	PE	3	0	0	3	3	40	60	100
6.		Open Elective – I**	OE	3	0	0	3	3	40	60	100
PRACTICALS											
7.	24CE605	Building Drawing and Detailing Laboratory	PC	0	0	4	4	2	60	40	100
EMPLOYABILITY ENHANCEMENT COURSES											
8.	24CE606	Mini Project	EEC	0	0	3	3	1.5	100	-	100
MANDATORY COURSES											
9.	24MC2	Mandatory course II**	MC	3	0	0	3	0	100	0	100
		Total		21	0	7	28	21.5			

* Professional Elective – IV to VI shall be chosen from the list of Professional electives (Verticals) offered by same Programme

** Mandatory course 1 shall be chosen from the list of Mandatory course – Non credit course

** Open Elective – I & 2 shall be chosen from the list of open electives offered by other Programmes

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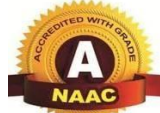## Curriculum and Syllabus
B.E - Civil Engineering

SEMESTER VII

S.No	Course Code	Course Title	Category	L	T	P	Total Contact Period	Credits	CIA	ESE	TM
				\multicolumn{3}{Periods / Week}			\multicolumn{3}{Max.Marks}	
THEORY											
1.	24CE701	Estimation, Costing and ValuationEngineering	PC	3	0	0	3	**3**	40	60	100
2.	24CE702	Hydrology and Water Resources Engineering	PC	3	0	0	3	**3**	40	60	100
3.	24CE703	Human Values and Ethics	PC	3	0	0	3	**2**	40	60	100
4.	24CE704	Total quality management	PC	3	0	0	3	**3**	40	60	100
5.		Professional Elective - VI	PE	3	0	0	3	**3**	40	60	100
6.		Open Elective – II**	OE	-	-	-	-	**2**	40	60	100
PRACTICALS											
7.	24CE705	Design Project	EEC	0	0	4	4	**2**	40	60	100
EMPLOYABILITY ENHANCEMENT COURSES											
8.	24GE706	Comprehensive Test & Viva Voce*	EEC	0	0	2	2	**1**	100	-	100
				Total	15	0	6	21	**19**		

**Elective - Management shall be chosen from the list of Elective Management courses.**

*The overall knowledge of the candidate in various courses he / she studied shall be evaluated by (i) Conducting comprehensive tests with multiple choice questions generally with pattern similar to

GATE and / or (ii) Viva - voce examination conducted by a Panel of Experts assigned by the Head Of the Department.

The members can examine the knowledge of the candidate by asking questions from various domains and the marks will be assigned based on their answers. This course shall carry one credits.

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Curriculum and Syllabus
B.E - Civil Engineering

SEMESTER VIII

S.No	Course Code	Course Title	Category	Periods / Week			Total Contact Period	Credits	Max.Marks		
				L	T	P			CIA	ESE	TM
		EMPLOYABILITY ENHANCEMENT COURSES									
1.	24CE801	Summer Internship@	EEC	0	0	0	4	**1**	100	-	100
2.	24CE802	Project Work***	EEC	0	0	20	20	**10**	40	60	100
			Total	0	0	20	24	11			

*** The students undergoing project in VIII semester must include their LIT/NET/LIVE case study & the topics must be under the norms that set by the project head & R&D Team of the Institution.

@ The students individually undergo training in reputed firms/ Research institutes / laboratories for the specified duration (04 Weeks) during Initial periods of VIII semester. After completion of training, adetailed report should be submitted within ten days from the commencement of second slot.

TOTAL CREDITS: 169

MANDATORY COURSES I & II

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CIA	ESE	TM
1.	24MC501	Indian Constitution	MC	3	0	0	3	0	100	-	100
2.	24MC502	Introduction to Women and Gender Studies	MC	3	0	0	3	0	100	-	100
3.	24MC503	Intellectual Property Rights	MC	3	0	0	3	0	100	-	100
4.	24MC601	Industrial Safety	MC	3	0	0	3	0	100	-	100
5.	24MC602	Research Paper Publication	MC	3	0	0	3	0	100	-	100
6.	24MC603	Political and Economic Thought for a Humane Society	MC	3	0	0	3	0	100	-	100

ELECTIVE – MANAGEMENT COURSES

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CIA	ESE	TM
1.	24MSE71	Principles Of Management	HSS	3	0	0	3	3	40	60	100
2.	24MSE72	Professional ethics in Engineering	HSS	3	0	0	3	3	40	60	100
3.	24MSE73	Engineering Economics and Financial Accounting	HSS	3	0	0	3	3	40	60	100
4.	24MSE74	Human Resource Management	HSS	3	0	0	3	3	40	60	100
5.	24MSE75	Knowledge Management	HSS	3	0	0	3	3	40	60	100
6.	24MSE76	Industrial Management	HSS	3	0	0	3	3	40	60	100

PROFESSIONAL ELECTIVES – REGISTRATION

SINO	ELECTIVE	SEMESTER	CREDITS
1	PROFESSIONAL ELECTIVE I	V	3
2	PROFESSIONAL ELECTIVE II	V	3
3	PROFESSIONAL ELECTIVE III	V	3
4	PROFESSIONAL ELECTIVE IV	VI	3
5	PROFESSIONAL ELECTIVE V	VI	3
6	PROFESSIONAL ELECTIVE VI	VII	3
TOTAL CREDITS:			18

SEMESTER V

PROFESSIONAL ELECTIVE I: ENVIRONMENT

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CA	ES	TM
1.	24CEE61	Climate Change Adaptation and Mitigation	PE	3	0	0	3	3	40	60	100
2.	24CEE62	Air and Noise Pollution Control Engineering	PE	3	0	0	3	3	40	60	100
3.	24CEE63	Environmental Impact Assessment	PE	3	0	0	3	3	40	60	100
4.	24CEE64	Industrial Wastewater Management	PE	2	0	2	4	3	50	50	100
5.	24CEE65	Solid and Hazardous Waste Management	PE	3	0	0	3	3	40	60	100
6.	24CEE66	Environmental Policy and Legislations	PE	3	0	0	3	3	40	60	100
7.	24CEE67	Environmental Quality Monitoring	PE	3	0	0	3	3	40	60	100

SEMESTER V

PROFESSIONAL ELECTIVE II: DIVERSIFIED COURSES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CA	ES	TM
1.	24CEE51	Steel Concrete Composite Structures	PE	3	0	0	3	3	40	60	100
2.	24CEE52	Finance for Engineers	PE	3	0	0	3	3	40	60	100
3.	24CEE53	Earth and Rock fill Dams	PE	3	0	0	3	3	40	60	100
4.	24CEE54	Computational FluidDynamics	PE	3	0	0	3	3	40	60	100
5.	24CEE55	Rainwater Harvesting	PE	3	0	0	3	3	40	60	100
6.	24CEE56	Transport and Environment	PE	3	0	0	3	3	40	60	100
7.	24CEE57	Environmental Health andSafety	PE	3	0	0	3	3	40	60	100

SEMESTER V

PROFESSIONAL ELECTIVE III: TRANSPORTATION INFRASTRUCTURE

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CA	ES	TM
1.	24CEE51	Airports and Harbours	PE	3	0	0	3	3	40	60	100
2.	24CEE52	Traffic Engineering andManagement	PE	3	0	0	3	3	40	60	100
3.	24CEE53	Urban Planning andDevelopment	PE	3	0	0	3	3	40	60	100
4.	24CEE54	Smart Cities	PE	3	0	0	3	3	40	60	100
5.	24CEE55	Intelligent TransportSystems	PE	3	0	0	3	3	40	60	100
6.	24CEE56	Highway Engineering	PE	3	0	0	3	3	40	60	100
7.	24CEE57	Transportation PlanningProcess	PE	3	0	0	3	3	40	60	100

SEMESTER VI

PROFESSIONAL ELECTIVE IV: STRUCTURES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CA	ES	TM
1.	24CEE11	Concrete Structures	PE	3	0	0	3	3	40	60	100
2.	24CEE12	Steel Structures	PE	3	0	0	3	3	40	60	100
3.	24CEE13	Foundations and earth structures	PE	3	0	0	3	3	40	60	100
4.	24CEE14	Prestressed Concrete Structures	PE	3	0	0	3	3	40	60	100
5.	24CEE15	Rehabilitation/Heritage Restoration	PE	3	0	0	3	3	40	60	100
6.	24CEE16	Dynamics and EarthquakeResistant Structures	PE	3	0	0	3	3	40	60	100
7.	24CEE17	Introduction to FiniteElement Method	PE	3	0	0	3	3	40	60	100

SEMESTER VI

PROFESSIONAL ELECTIVE V: GEOTECHNICAL

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CA	ES	TM
1.	24CEE37	Tunneling Engineering	PE	3	0	0	3	3	40	60	100
2.	24CEE32	Ground Improvement Techniques	PE	3	0	0	3	3	40	60	100
3.	24CEE33	Soil Dynamics and Machine Foundations	PE	3	0	0	3	3	40	60	100
4.	24CEE34	Rock Mechanics	PE	3	0	0	3	3	40	60	100
5.	24CEE35	Earth and Earth Retaining Structures	PE	3	0	0	3	3	40	60	100
6.	24CEE36	Pile Foundation	PE	3	0	0	3	3	40	60	100
7.	24CEE31	Geo-Environmental Engineering	PE	3	0	0	3	3	40	60	100

SEMESTER VII

PROFESSIONAL ELECTIVE VI: CONSTRUCTION TECHNIQUES AND PRACTICES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CA	ES	TM
1.	24CEE21	Formwork Engineering	PE	3	0	0	3	3	40	60	100
2.	24CEE22	Construction Equipment and Machinery	PE	3	0	0	3	3	40	60	100
3.	24CEE25	Construction planning and scheduling	PE	2	0	2	4	3	50	50	100
4.	24CEE23	Sustainable Construction and Lean Construction	PE	3	0	0	3	3	40	60	100
5.	24CEE24	Digitalized Construction Lab	PE	0	0	6	6	3	60	40	100
6.	24CEE26	Advanced Construction Techniques	PE	3	0	0	3	3	40	60	100
7.	24CEE27	Energy Efficient Buildings	PE	3	0	0	3	3	40	60	100

VERTICAL IV: GEO-INFORMATICS

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CA	ES	TM
1.	24CEE41	Total Station and GPS Surveying	PE	3	0	0	3	3	40	60	100
2.	24CEE42	Remote Sensing Concepts	PE	3	0	0	3	3	40	60	100
3.	24CEE43	Satellite Image Processing	PE	3	0	0	3	3	40	60	100
4.	24CEE44	Cartography and GIS	PE	3	0	0	3	3	40	60	100
5.	24CEE45	Photo grammetry	PE	3	0	0	3	3	40	60	100
6.	24CEE46	Airborne and Terrestrial Laser Mapping	PE	3	0	0	3	3	40	60	100
7.	24CEE47	Hydrographic Surveying	PE	3	0	0	3	3	40	60	100

VERTICAL VII: WATER RESOURCES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CA	ES	TM
1.	24CEE51	Participatory Water Resources Management	PE	3	0	0	3	3	40	60	100
2.	24CEE52	Ground Water Engineering	PE	3	0	0	3	3	40	60	100
3.	24CEE53	Water Resources Systems Engineering	PE	3	0	0	3	3	40	60	100
4.	24CEE54	Watershed Conservation and Management	PE	3	0	0	3	3	40	60	100
5.	24CEE55	Integrated Water Resources Management	PE	3	0	0	3	3	40	60	100
6.	24CEE56	Urban Water Infrastructure	PE	3	0	0	3	3	40	60	100
7.	24CEE57	Water Quality and Management	PE	3	0	0	3	3	40	60	100

VERTICAL VIII – OCEAN ENGINEERING

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS	Max.Marks		
				L	T	P			CA	ES	TM
1.	24CEE61	Ocean Wave Dynamics	PE	3	0	0	3	3	40	60	100
2.	24CEE62	Marine Geotechnical Engineering	PE	3	0	0	3	3	40	60	100
3.	24CEE63	Coastal Engineering	PE	3	0	0	3	3	40	60	100
4.	24CEE64	Offshore Structures	PE	3	0	0	3	3	40	60	100
5.	24CEE65	Port and Harbour Engineering	PE	3	0	0	3	3	40	60	100
6.	24CEE66	Coastal Hazards and Mitigation	PE	3	0	0	3	3	40	60	100
7.	24CEE67	Coastal Zone Management and Remote Sensing	PE	3	0	0	3	3	40	60	100

OPEN ELECTIVES

OPEN ELECTIVES OFFERED BY OTHER DEPARTMENTS

OPENELECTIVES – I

S. NO.	COURSE CODE	COURSETITLE	CATEGORY	PERIODS PERWEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	24OE711	Space Science	OE	3	0	0	3	3
2.	24OE712	Introduction to Industrial Engineering	OE	3	0	0	3	3
3.	24OE713	Food, Nutrition and Health	OE	3	0	0	3	3
4.	24OE714	Environment and Social Impact Assessment	OE	3	0	0	3	3
5.	24OE715	Renewable Energy System	OE	3	0	0	3	3
6.	24OE716	Introduction to Industrial Instrumentation and Control	OE	3	0	0	3	3
7.	24OE717	Graph Theory	OE	3	0	0	3	3
8.	24OE718	Energy Conservation and Management	OE	3	0	0	3	3
9.	24OE719	Geographical Information System	OE	3	0	0	3	3
10.	24OE720	Random Processes	OE	3	0	0	3	3
11	24OE721	Management Science	OE	3	0	0	3	3
12	24OE722	Production Planning and Control	OE	3	0	0	3	3
13	24OE723	Operations Management	OE	3	0	0	3	3
14	24OE724	Electrical ,Electronic and Magnetic materials	OE	3	0	0	3	3
15	24OE725	Tele health Technology	OE	3	0	0	3	3

OPENELECTIVES–II

SL. NO.	COURS CODE	COURSETITLE	CATE GORY	PERIODS PERWEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	24OE725	Resource Management Techniques	OE	3	0	0	3	3
2.	24OE726	Applied Design Thinking	OE	3	0	0	3	3
3.	24OE727	Urban Agriculture	OE	3	0	0	3	3
4.	24OE728	Introduction to Control Engineering	OE	3	0	0	3	3
5.	24OE729	Project Report Writing	OE	3	0	0	3	3
6.	24OE730	Cost Management of Engineering Projects	OE	3	0	0	3	3
7.	24OE731	Sensors	OE	3	0	0	3	3
8.	24OE732	Concepts in Mobile Robots	OE	3	0	0	3	3
9.	24OE733	Sensors and Actuators	OE	3	0	0	3	3
10.	24OE734	Space Vehicles	OE	3	0	0	3	3
11.	24OE735	Industrial Engineering for Garment Industry	OE	3	0	0	3	3
12.	24OE736	Signals and Systems	OE	3	0	0	3	3
13.	24OE737	Additive Manufacturing	OE	3	0	0	3	3
14.	24OE738	Wearable Devices	OE	3	0	0	3	3

OPEN ELECTIVES OFFERED TO OTHER DEPARTMENTS

OPEN ELECTIVES – I

Sl. No	Course Code	Course Title	Category	Periods /Week			Credits	Max. Marks		
				L	T	P		CA	ES	TM
OFFERED BY DEPARTMENT OF CIVIL ENGINEERING										
1	24CEO11	Civil and Infrastructure Engineering	OE	3	0	0	3	40	60	100
2	24CEO12	Environmental Pollution and waste management	OE	3	0	0	3	40	60	100
3	24CEO13	Environmental Impact Assessment	OE	3	0	0	3	40	60	100
4	24CEO14	Building Services	OE	3	0	0	3	40	60	100
5	24CEO15	Water, Sanitation and Health	OE	3	0	0	3	40	60	100
OFFERED BY DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING										
1	24CSO11	Foundation of AR/VR	OE	2	0	2	3	50	50	100
2	24CSO12	Web Designing	OE	2	0	2	3	50	50	100
3	24CSO13	Block Chain fundamentals	OE	2	0	2	3	50	50	100
4	24CSO14	Knowledge Management	OE	2	0	2	3	50	50	100
5	24CSO15	Cloud Computing Essentials	OE	2	0	2	3	50	50	100

Sl.No	Course Code	Course Title	Category	Periods /Week			Credits	Max. Marks		
				L	T	P		CA	ES	TM
OFFERED BY DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING										
1	24ECO11	Basics of electronics in automation	OE	3	0	0	3	40	60	100
2	24ECO12	Optical engineering	OE	3	0	0	3	40	60	100
3	24ECO13	E-waste management	OE	3	0	0	3	40	60	100
4	24ECO14	Consumer electronics	OE	3	0	0	3	40	60	100
5	24ECO15	Principles of communication engineering	OE	3	0	0	3	40	60	100
OFFERED BY DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING										
1	24EEO11	Renewable Energy Sources	OE	3	0	0	3	40	60	100
2	24EEO12	Electrical Vehicle	OE	3	0	0	3	40	60	100
3	24EEO13	Energy Auditing and Conservation	OE	3	0	0	3	40	60	100

| 4 | 24EEO14 | Domestic and Industrial Electrical Installations | OE | 3 | 0 | 0 | 3 | 40 | 60 | 100 |
| 5 | 24EEO15 | Microcontroller Based System Design | OE | 3 | 0 | 0 | 3 | 40 | 60 | 100 |

OFFERED BY DEPARTMENT OF MECHANICAL ENGINEERING

1	24MEO11	Industrial Instrumentation	OE	3	0	0	3	40	60	100
2	24MEO12	Energy Technology	OE	3	0	0	3	40	60	100
3	24MEO13	Reverse Engineering	OE	3	0	0	3	40	60	100
4	24MEO14	Fire Safety Engineering	OE	3	0	0	3	40	60	100
5	24MEO15	Nano Technology	OE	3	0	0	3	40	60	100

OFFERED BY DEPARTMENT ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

1	24AD011	Introduction to Big Data	OE	2	0	2	3	50	50	100
2	24AD012	Principles of Data Science	OE	2	0	2	3	50	50	100
3	24AD013	Data Visualization and its Applications	OE	2	0	2	3	50	50	100
4	24AD014	Data Warehousing and Mining	OE	2	0	2	3	50	50	100
5	24AD015	Principles of Cyber Security	OE	2	0	2	3	50	50	100

Sl. No	Course Code	Course Title	Category	Periods /Week			Credits	Max. Marks		
				L	T	P		CA	ES	TM
OFFERED BY DEPARTMENT INFORMATION TECHNOLOGY										
1	24IT011	Basics of Java Programming	OE	2	0	2	3	50	50	100
2	24IT012	Ethical Hacking	OE	2	0	2	3	50	50	100
3	24IT013	E-Commerce and Applications	OE	2	0	2	3	50	50	100
4	24IT014	Basics of Android Application Development	OE	2	0	2	3	50	50	100
5	23IT015	Introduction to Web Design	OE	2	0	2	3	50	50	100
OFFERED BY DEPARTMENT OF PHARMACEUTICAL TECHNOLOGY										
1	24PTO11	Nutraceuticals	OE	3	0	0	3	40	60	100
2	24PTO12	IPR for Pharma Industry	OE	3	0	0	3	40	60	100
3	24PTO13	Pharmaceutical Nanotechnology	OE	3	0	0	3	40	60	100
4	24PTO14	Basics of Human Anatomy andphysiology	OE	3	0	0	3	40	60	100

		OFFERED BY DEPARTMENT BIOMEDICAL ENGINEERING								
1	24BMO11	Biomedical Instrumentation	OE	3	0	0	3	40	60	100
2	24BMO12	Medical Optics	OE	3	0	0	3	40	60	100
3	24BMO13	Biometric systems and theirapplications	OE	3	0	0	3	40	60	100
4	24BMO14	Healthcare Management systems	OE	3	0	0	3	40	60	100
5	24BMO15	IOT in Medicine	OE	3	0	0	3	40	60	100

24EN101	TECHNICAL ENGLISH - I			Version : 1.0		
DEPARTMENT OF SCIENCE AND HUMANITIES						
Programme & Branch	**Common to all B.E / B.Tech Degree**	L	T	P	C	
		3	0	0	3	

COURSE OBJECTIVES

The course is intended to

- Improve the communicative competence of learners

- Learn to use basic grammatical structures in suitable contexts

- Acquire lexical competence and use them appropriately in a sentence and understand their meaning in a text

- Help learners use language effectively in professional contexts

- Develop learners' ability to read and write complex texts, summaries, articles, blogs, definitions, essays and user manuals.

INTRODUCTION TO EFFECTIVE COMMUNICATION	1

What is effective communication? (Explain using activities) Why is communication critical for excellence during study, research and work? What are the seven C's of effective communication? What are key language skills? What is effective listening? What does it involve? What is effective speaking? What does it mean to be an excellent reader? What should you be able to do? What is effective writing? How does one develop language and communication skills? What does the course focus on? How are communication and language skills going to be enhanced during this course? What do you as a learner need to do to enhance your English language and communication skills to get the best out of this course?

UNIT - I	**INTRODUCTION TO FUNDAMENTALS OF COMMUNICATION**	8

Listening – Human needs in communication, Ways to Develop Language and Communication Skills. Reading - Reading brochures (technical context), telephone messages / social media messages relevant to technical contexts. Writing - Writing emails / letters introducing oneself. Grammar – Parts of Speech; Question types: WH/ Yes or No/ and Tags. Vocabulary - synonyms; One word substitution; Abbreviations & Acronyms (as used in technical contexts).

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UNIT - II	NARRATION AND SUMMATION	9

Reading - Reading biographies, travelogues, newspaper reports, Excerpts from literature, and travel & technical blogs. Writing - Guided writing-- Paragraph writing Short Report on an event (field trip etc.) Grammar –Present tense; and Prepositions. Vocabulary - Word forms (prefixes& suffixes); Synonyms and Antonyms; Sentence Pattern

UNIT - III	DESCRIPTION OF A PROCESS / PRODUCT	9

Reading – Reading advertisements, gadget reviews; user manuals. Writing - Writing definitions; instructions; and Product /Process description. Grammar - Imperatives; Adjectives; Degrees of comparison; Past Tense; Vocabulary - Compound Nouns, Homonyms and Homophones.

UNIT - IV	CLASSIFICATION AND RECOMMENDATIONS	9

Reading – Newspaper articles; Journal reports – and Non Verbal Communication. Writing – Note-making / Note-taking, Grammar – Articles; Pronouns - Possessive & Relative pronouns. Vocabulary - Collocations; Future Tense.

UNIT - V	EXPRESSION	9

Reading – Reading editorials; and Opinion Blogs; Writing – Essay Writing (Descriptive or narrative); Resume preparation. Grammar - Punctuation; Negation (Statements & Questions); and Simple, Compound & Complex Sentences. Vocabulary - Content vs. Function words.

TOTAL: 45 PERIODS

LEARNING OUTCOMES

At the end of the course, learners will be able to

- Write grammatically correct sentences with appropriate words and texts.
- Develop skills for effective speaking in real contexts.
- Write formal and informal letters, e-mails and short narrations.
- Acquire information through listening and reading comprehension.
- Concentrate on listening lengthy talks and participate in conversations.

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TEXT BOOKS

1. Department of English, Anna University, "English for Engineers & Technologists"Orient Blackswan Private Ltd, 2020.

2. Dr.Veena Selvam, Dr.Sujatha Priyadarshini, & CO, Department of English, Anna University, "English for Science & Technology" Cambridge University Press, 2021

REFERENCE BOOKS

1. Meenakshi Raman & Sangeeta Sharma, "Technical Communication–Principles and Practices", Oxford Univ. Press, New Delhi, 2016.

2. Lakshminarayanan, "A Course Book on Technical English", Scitech Publications (India) Pvt. Ltd. 2012.

3. Aysha Viswamohan, "English For Technical Communication (With CD)",Mcgraw Hill Education, ISBN : 0070264244, 2008.

E. RESOURCES

1. https://www.youtube.com/watch?v=U_0ykicxFps&list=PLxSz4mPLHWDZ95iyxBNdjxLNI1k8 HnVcd&pp=iAQB

2. https://www.youtube.com/watch?v=AFVVvIsRJkA&list=PLxSz4mPLHWDZgp8e6i0oyXOOrT AAaj0O7&pp=iAQB

3. https://www.youtube.com/watch?v=jyoFvSPFDIo&list=PLCcteVWYyBtteZ69xEH2HG-hwK5ZuNvHc

MAPPING OF COs With POs AND PSOs

COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	2	3	-	3	-	-	-
CO2	-	-	-	-	-	1	-	-	2	3	-	2	-	-	-
CO3	-	-	-	-	-	1	-	-	3	3	-	3	-	-	-
CO4	-	-	-	2	-	-	-	-	3	3	-	3	-	-	-
CO5	-	-	-	-	-	-	-	-	2	3	-	2	-	-	-
AVG	-	-	-	2	-	1	-	-	2.4	3	-	2.6	-	-	-

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24MA102	MATRICES AND DIFFERENTIAL CALCULUS	Version : 1.0			
DEPARTMENT OF SCIENCE AND HUMANITIES					
Programme & Branch	Common to all B.E / B.Tech Degree	L	T	P	C
		3	1	0	4

COURSE OBJECTIVES

- To develop a deep understanding of Matrices, including Eigenvalues, Eigenvectors, and Quadratic forms, and their Applications in various Mathematical problems.
- To provide students with a Comprehensive foundation in Differential calculus, focusing on practical applications such as Curvature, Evolutes and Envelopes.
- To equip students with the skills to handle Functions of Several Variables, including Partial differentiation, Jacobians, and Optimization Techniques.
- To teach methods for solving Ordinary differential equations, both with constant and variable coefficients, using various Techniques.
- To introduce the concepts and applications of Multiple Integrals in calculating areas and volumes, emphasizing their use in real-world problems.

UNIT - I	MATRICES	9+3

Eigen values and Eigenvectors of a real matrix – Characteristic equation – Properties of Eigen values and Eigenvectors – Cayley - Hamilton theorem (statement and problems only)– Diagonalization of matrices by Orthogonal transformation – Reduction of a Quadratic form to Canonical form by Orthogonal transformation – Nature of quadratic forms.

UNIT - II	APPLICATIONS OF DIFFERENTIAL CALCULUS	9+3

Limit of a function - Differentiation rules (sum, product and quotient rules) - Curvature in Cartesian co-ordinates – Centre of Curvature – Radius of Curvature – Circle of Curvature – Evolutes – Envelopes - Evolute as envelope of Normals.

UNIT - III	FUNCTIONS OF SEVERAL VARIABLES	9+3

Partial differentiation – Homogeneous functions and Euler's theorem– Jacobians – Taylor's series for functions of two variables – Applications: Maxima and minima of functions of two variables and Lagrange's method of undetermined Multipliers.

UNIT - IV	ORDINARY DIFFERENTIAL EQUATIONS	9+3

Linear differential equations of second and higher order with constant coefficients - Particular Integrals for the types: $e^{ax} - \cos ax / \sin ax - x^n - e^{ax} x^n$,$e^{ax} \sin bx$ and $e^{ax} \cos bx - x^n \sin ax$ and $x^n \cos a x -$

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Method of variation of parameters - Differential Equations with variable coefficients: Euler-Cauchy's equation – Legendre's equation.

UNIT - V	MULTIPLE INTEGRALS	9+3

Double integrals– Change of order of integration – Double integrals in Cartesian coordinates – Area enclosed by plane curves – Triple integrals – Volume of solids.

TOTAL: 60 PERIODS

COURSE OUTCOMES

At the end of the course, learners will be able to

CO1: Compute Eigen values and Eigenvectors, apply the Cayley - Hamilton theorem, and perform matrix Diagonalization and Quadratic form reduction

CO2: Proficient in using Differential calculus techniques to solve problems involving Curvature, Evolutes, and Envelopes

CO3: Understand and apply Partial Differentiation, Euler's theorem, and Jacobian matrices to solve Optimization problems involving several variables.

CO4: Solve second and higher-order ordinary differential equations using various methods, including the method of variation of parameters.

CO5: Evaluate double and triple integrals to find areas and volumes, demonstrating an understanding of their applications in physical contexts.

TEXT BOOKS

1. Grewal.B.S., "Higher Engineering Mathematics", Khanna Publishers, New Delhi, 44th Edition , 2018.

2. James Stewart, "Calculus: Early Transcendentals", Cengage Learning, 8th Edition, New Delhi, 2015.

3. M. D. Raisinghania, "Ordinary and Partial Differential equations", S.Chand publications, 13th edition, 2011.

REFERENCE BOOKS

1. Anton. H, Bivens. I and Davis. S, "Calculus", Wiley, 10th Edition, 2016

2. Bali. N., Goyal. M. and Watkins. C., "Advanced Engineering Mathematics", Firewall Media (An imprint of Lakshmi Publications Pvt., Ltd.,), New Delhi, 7th Edition, 2009.

3. Jain . R.K. and Iyengar. S.R.K., "Advanced Engineering Mathematics", Narosa Publications,

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New Delhi, 5th Edition, 2016.

4. Narayanan. S. and Manikavachagom Pillai. T. K., "Calculus" Volume I and II, S. Viswanathan Publishers Pvt. Ltd., Chennai, 2009.

5. Ramana. B.V., "Higher Engineering Mathematics", McGraw Hill Education Pvt. Ltd, New Delhi, 2016.

6. Srimantha Pal and Bhunia. S.C, "Engineering Mathematics" Oxford University Press, 2015.

7. Thomas. G. B., Hass. J, and Weir. M.D, "Thomas Calculus", 14th Edition, Pearson India, 2018.

8. Dr. G. Balaji, "Engineering mathematics-I", 6th Edition, Balaji Publications, Chennai,2018.

WEB REFERENCES

1. https://www.scribd.com/document/595384513/MA3151-Matrices-and-Calculus-Lecture-Notes-1
2. https://mrcet.com/downloads/digital_notes/HS/Mathematics-I.pdf
3. http://eflorakkl.in/staff/uploads2/Multiple%20Integrals%20and%20their%20Applications.pdf

VIDEO REFERENCE

1. https://www.youtube.com/watch?v=iQTQcKjfVcA
2. https://www.youtube.com/watch?v=HDbBbB277aQ
3. https://www.youtube.com/watch?v=TyF9yf8V6WY&list=PLpklqhIbn1jpBog00CBB-OjKyxVxXqqFc
4. https://www.youtube.com/watch?v=hby7wFjcMTk
5. https://www.youtube.com/watch?v=nCUimMsSzlc

ONLINE COURSES REFERENCES

1. https://www.digimat.in/nptel/courses/video/111108081/L01.html
2. https://www.youtube.com/watch?v=UBdVyQzjNJw
3. https://www.youtube.com/watch?v=q91RoheV4K0

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MAPPING OF COs With POs AND PSOs

COs	POs												PSOs	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	1	0	0	0	0	0	0	0	0	0	-	-
CO2	3	3	1	0	0	0	0	0	0	0	0	0	-	-
CO3	3	3	1	0	0	0	0	0	0	0	0	0	-	-
CO4	3	3	1	0	0	0	0	0	0	0	0	0	-	-
CO5	3	3	1	0	0	0	0	0	0	0	0	0	-	-
AVG	3	3	1	0	0	0	0	0	0	0	0	0	-	-

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24PH103	ENGINEERING PHYSICS			Version : 1.0	
DEPARTMENT OF SCIENCE AND HUMANITIES					
Programme & Branch	**Common to all B.E / B.Tech Degree**	L	T	P	C
		3	0	0	3

COURSE OBJECTIVES

- To make the students effectively achieve an understanding of mechanics.
- To enable the students to gain knowledge of electromagnetic waves and its applications.
- To introduce the basics of fiber optics and lasers.
- Equipping the students to successfully understand the background of quantum physics.
- To motivate the students towards the applications of quantum mechanics.

UNIT - I	MECHANICS	9

Multi-particle dynamics: Center of mass (CM) – CM of continuous bodies –- theorems of M .I – Moment of Inertia of a diatomic molecule (derivation)– conservation of angular momentum – rotational energy state of a rigid diatomic molecule - torsional pendulum––Expression for Rigidity Modulus and moment of inertia- Introduction to nonlinear oscillations.

UNIT - II	ELECTROMAGNETIC WAVES	9

The Maxwell's equations - wave equation; Plane electromagnetic waves in vacuum – properties of electromagnetic waves: speed, amplitude, phase, orientation of waves in matter- Cell-phone reception.Reflection and transmission of electromagnetic waves from a non-conducting medium

UNIT - III	FIBER OPTICS AND LASERS	9

Introduction to optical fiber - total internal reflection –Expression for numerical aperture and Acceptanceangle - Theory of laser - characteristics - Spontaneous and stimulated emission - Einstein's coefficients (derivation)- population inversion - CO_2 laser, Semiconductor laser (Homojunction and Hetero -junction0 –Basic applications of lasers in Industry.

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UNIT - IV	BASIC QUANTUM MECHANICS	9

Photons and light waves - Electrons and matter waves –Compton effect(Theory and derivation) - TheSchrodinger equation (Time dependent and time independent forms) - meaning of wave function - Normalization –Free particle - particle in an infinite potential well: one dimensional box .

UNIT - V	APPLIED QUANTUM MECHANICS	9

The Harmonic oscillator(qualitative)- Barrier penetration and quantum tunnelling(qualitative)-Tunnelling microscope - Resonant tunnelling diode- Bloch's theorem for particles in a periodic potential –Origin ofenergy bands.

TOTAL: 45 PERIODS

COURSE OUTCOMES

After completion of this course, the students will be able to

CO1: Understand the importance of mechanics.

CO2: Remember and apply their knowledge in Electromagnetic fields

CO3: Analyze the problems related to optics and lasers.

CO4: Understand the importance of quantum physics.

CO5: Apply quantum mechanical principles towards the formation of energy bands.

TEXT BOOKS

1. A.Marikani, 'Engineering Physics', PHI learning Private Ltd. Delhi, 2021

2. Dr,R,Suresh & G.Ravindra devi Revathi , 'Engineering Physics', Sri Krishna Publications,2023

3. Dr.G.Senthil Kumar & Dr. S.Murugavel, 'Engineering Physics', VRB Publishers, 2023

4. Shaendra Sharma & Jyotsna Sharma ,'Engineering Physics' ,Pearson Education,2018

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REFERENCE BOOKS

1. R.J.Sngh,'Sold State Physics', Pearson Education (Indian Edition), 2012.

2. R.K.Gaur & S.L.Gupta,'Engineerig Physics',Dhanpatrai Publications,2014.

3. R D.Halliday, R.Resnick,' Physics Vol-I & II', Wiley(Indian Edition), 2009.

4. Serway, R.A. & Jewett, J.W. "Physics for Scientists and Engineers". Cengage Learning,2010.

5. Arthur Beiser,'Concepts of Modern Physics',Tata Mc-Grw Hill Publishers,2008

6. Harris Benson,'University Physics', Wiley(India),2008

WEB REFERENCES

- https://www.poriyaan.in/paper/engineering-physics-3
- https://www.msajce-edu.in/academics/sh/LectureNote/PH3151-LN.pdf
- https://rajeshvcet.home.blog/wp-content/uploads/2022/01/unit-3-laser-reg-2021.pdf
- https://rajeshvcet.home.blog/wp-content/uploads/2022/02/unit-4-basic-quantum-physics-reg-2021-1.pdf
- https://rajeshvcet.home.blog/wp-content/uploads/2022/02/unit-5-advanced-quantum-physics-reg-2021.pdf

MAPPING OF COs With POs AND PSOs

COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	-	-	-	-	2	1	1	2	2	-	-	-
CO2	3	1	1	1	-	-	-	1	1	1	1	2	-	-	-
CO3	3	2	1	-	-	-	-	1	1	1	1	1	-	-	-
CO4	3	1	1	-	-	-	-	1	1	2	1	1	-	-	-
CO5	3	1	2	1	-	-	-	1	1	2	1	1	-	-	-
AVG	3	1.2	1.2	1	-	-	-	1.2	1	1.4	1.2	1.4	-	-	-

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24CY104	ENGINEERING CHEMISTRY			Version : 1.0	
DEPARTMENT OF SCIENCE AND HUMANITIES					
Programme & Branch	Common to all B.E / B.Tech Degree	L	T	P	C
		3	0	0	3

COURSE OBJECTIVES

- To make the students conversant with boiler feed water requirements, related problems and water treatment techniques.
- To acquaint the students with the basics of nano materials, their properties and applications.
- To develop an understanding of the basic concepts of phase rule and its applications to single and two component systems and appreciate the purpose and significance of alloys.
- To facilitate the understanding of different types of fuels, their preparation, properties and combustion characteristics.
- To familiarize the students with the operating principles, working processes and applications of energy conversion and storage devices.

UNIT - I	WATER AND ITS TREATMENT	9

Hardness of water – types – expression of hardness – units – estimation of hardness of water by EDTA – numerical problems – **boiler troubles** (scale and sludge) – **treatment of boiler feed water** – Internal treatment (phosphate, colloidal, sodium aluminate and calgon conditioning) external treatment – Ion exchange process, zeolite process – **desalination of brackish water** - Reverse Osmosis.

UNIT - II	NANO MATERIALS AND FABRICATION	9

Basic Definitions of Nanomaterials- Distinction between molecules, nanomaterials and bulk materials; **Types of nanomaterials**: Definition, properties and uses of – nanoparticle, nanocluster, nanorod, nanowire and nanotube (CNT). **Preparation of nanomaterials**: sol-gel, solvothermal, laser ablation, chemical vapour deposition, electrochemical deposition. **Applications of nanomaterials** in medicine, agriculture, energy, electronics and catalysis.

UNIT - III	PHASE RULE AND ALLOYS	9

Phase rule: Introduction, definition of terms with examples – **one component system** – water system – **condensed phase rule** – construction of phase diagram by thermal analysis – **simple eutectic systems** (lead-silver system only). **Alloys** – importance, ferrous alloys – nichrome and stainless steel – heat treatment of steel, non-ferrous alloys – brass and bronze.

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UNIT - IV	FUELS AND COMBUSTION	9

Fuels: Introduction - classification of fuels - **coal** - analysis of coal (proximate) - carbonization - manufacture of metallurgical coke (Otto Hoffmann method) - **petroleum** - manufacture of synthetic petrol (Bergius process) - knocking - octane number - diesel oil - cetane number - **natural gas** - compressed natural gas (CNG) - liquefied petroleum gases (LPG) - power alcohol and biodiesel. **Combustion of fuels:** Introduction - calorific value - higher and lower calorific values- theoretical calculation of calorific value - ignition temperature - spontaneous ignition temperature - flue gas analysis (ORSAT Method).

UNIT - V	ENERGY SOURCES AND STORAGE DEVICES	9

Non-Renewable Energy Sources - Nuclear fission - controlled nuclear fission - nuclear fusion - differences between nuclear fission and fusion - nuclear chain reactions - nuclear energy - light water nuclear power plant - breeder reactor - **Renewable Energy Sources** - Solar energy conversion - solar cells - wind energy.

Batteries: Types of batteries, Primary battery - dry cell, Secondary battery - lead acid battery and lithium-ion-battery; Electric vehicles-principles, working; Fuel cells: H_2-O_2 fuel cell, microbial fuel cell.

TOTAL: 45 PERIODS

COURSE OUTCOMES

At the end of the course, the students will be able to:

CO1: Obtain the knowledge of water treatment in engineering field

CO2: Identify the basic concepts of Nano science and nanotechnology in designing the synthesis of nanomaterial for engineering and technology applications.

CO3: Apply the knowledge of phase rules and alloys.

CO4. Recommend suitable fuels for engineering processes and applications.

CO5. Recognize different forms of energy resources and apply them for suitable applications in energy sect.

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TEXT BOOKS

1. P. C. Jain and Monica Jain, "Engineering Chemistry", 19th Edition, Dhanpat Rai Publishing Company (P) Ltd, New Delhi, 2021.

2. Sivasankar B., "Engineering Chemistry", Tata McGraw-Hill Publishing Company Ltd, New Delhi,2021.

3. S.S. Dara, "A text book of Engineering Chemistry", S. Chand Publishing, 15th Edition,2021.

4. Kannan P., Ravikrishnan A., "Engineering Chemistry", Sri Krishna Hi-tech Publishing Company Pvt. Ltd. Chennai, 2024-2025.

5. S. Vairam, P. Kalyani and Suba Ramesh, "Engineering Chemistry", Wiley India PVT, LTD, New Delhi, 2021.

REFERENCE BOOKS

1. Friedrich Emich, "Engineering Chemistry", Scientific International PVT, LTD, New Delhi, 2014.

2. PrasantaRath, "Engineering Chemistry", Cengage Learning India PVT, LTD, Delhi, 2015

3. ShikhaAgarwal,"Engineering Chemistry-Fundamentals and Applications", Cambridge University Press, Delhi, 2015.

4. Ozin G. A. and Arsenault A. C., "Nanochemistry: A Chemical Approach to Nanomaterials", RSC Publishing, 2015.

5. O.G. Palanna, "Engineering Chemistry" McGraw Hill Education (India) Private Limited, 2nd Edition, 2017.

6. Friedrich Emich, "Engineering Chemistry", Scientific International PVT, LTD, New Delhi, 2014.

MAPPING OF COs With POs AND PSOs

COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	1	2	2	2	1	-	-	-	1	-	-	-
CO2	2	2	1	1	2	1	1	0	-	-	-	1	-	-	-
CO3	2	2	2	1	1	1	1	0	-	-	-	1	-	-	-
CO4	2	2	1	1	1	1	1	0	-	-	-	1	-	-	-
CO5	2	1	3	2	1	2	1	0	-	-	-	1	-	-	-
AVG	2.0	1.8	1.8	1.2	1.4	1.4	1.2	0.2	-	-	-	1	-	-	-

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24CS105	FUNDAMENTALS OF COMPUTING AND PROGRAMMING IN C			Version : 1.0	
	Common to all B.E/B.Tech Degree				
Programme & Branch	B.E – COMPUTER SCIENCE AND ENGINEERING	L	T	P	C
		3	0	0	3

COURSE OBJECTIVES

- To Understand and analyze foundational concepts in computer systems.

- To understand the fundamentals of C programming and its structure.

- To apply fundamental programming constructs and functions in decision-making and iterative Processes.

- To evaluate proficiency in manipulating arrays and strings, and applying fundamental programming operations.

- To apply and evaluate fundamental concepts and advanced applications of pointers, structures, and file handling in C programming.

UNIT - I	BASICS OF COMPUTERS	9

Introduction to Computers -Input and Output Devices -Computer Memory and Processors - Computer Software - Computer Networks and Internet - **Computer Organization and Architecture**: Central Processing Unit - Internal Communications - The Bus - **Operating Systems**: History of Operating Systems- Types of Operating Systems- Security and privacy.

UNIT - II	INTRODUCTION TO C PROGRAMMING	9

Introduction to C– Structure of C Program – Writing the First C Program - Compiling and Executing C Programs -Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting.

UNIT - III	DECISION CONTROL AND LOOPING STATEMENTS	9

Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Goto Statement- Functions: Introduction – Function Definition – Function Declaration/ Prototype - Function Call – Return Statement – Passing Parameters – Scope of Variables – Storage Classes – Recursive Function.

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UNIT - IV	ARRAYS	9

Arrays: Introduction – Declaration Of Arrays – Accessing Elements Of the Array – Storing Values in Array – Calculating the Length of the Array – Operations on Array – One Dimensional Array– Two Dimensional Arrays – Operations on Two Dimensional Arrays- Strings: Introduction -String and Character Functions.

UNIT - V	POINTERS AND FILES	9

Introduction to Pointers – Declaring Pointer Variables – Pointer Expressions and Pointer Arithmetic – Null Pointers – Generic Pointers - Passing Arguments to Functions using Pointer – Pointer and Arrays–Introduction to Structure – Nested Structures – Arrays Of Structures – Unions-Introduction To Files – Using Files in C – Reading Data from Files – Writing Data from Files – Detecting the End-of-File –Close a File – Random Access Files – Binary Files – Command Line Arguments.

TOTAL: 45 PERIODS

COURSE OUTCOMES

Upon Completion of the Course, The Students Will Be Able To

- Students will be able to Understand and explain the components and functions of computer systems.
- Identify basic elements of C programming (keywords, identifiers, data types).
- Students will be able to analyze programming problems, design solution, and implement them effectively using functions.
- Students will be able to analyze, apply, and create programs that manipulate arrays and strings.
- Students will be able to analyze, evaluate, and apply pointer arithmetic, structure, and file manipulation techniques.

TEXT BOOKS

1. "Fundamentals of Computers" by Reema Thareja from Oxford University Press, 2023.

2. "Windows 10: The missing Manual" by David Pogue, O'Reily First Edition.2022.

3. Ashok.N.Kamthane, "Computer Programming", Pearson Education (India) (2020).

4. E.Balagurusamy, (2020), Programming in ANSI C, Fifth Edition, and Tata McGraw- Hill Publications.

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REFERENCE BOOKS

1. Ashok N Kamthane, (2020), Programming With ANSI and Turbo C, Sixth Edition, Pearson Education India Publications.

2. Henry Mullish& Herbert L Cooper, (2021), "The Spirit of C", 30th Edition, West Publishing Company.

3. Pradip Dey, Manas Ghoush, "Programming in C", Oxford University Press. (2016).

4. Stephen G.Kochan, "Programming in C", 4th Edition, Pearson Education India,(2014).

5. Brian W.Kernighan and Dennis M.Ritchie, "The C Programming Language", Pearson Education Inc., (2005).

6. S.Thamarai Selvi and R.Murugan, "C for All", Anuradha Publishers, (2008).

WEB REFERENCES

1. https://www.geeksforgeeks.org/free-c-programming-course-online/
2. https://www.tutorialspoint.com/cprogramming/index.htm
3. https://www.javatpoint.com/c-programming-language-tutorial

VIDEO REFERENCES

1. https://www.youtube.com/watch?v=-AP1nNK3bRs

2. https://youtu.be/EjavYOFoJJ0?si=Via8CM3xAvmKfMab

3. https://www.youtube.com/watch?v=rLf3jnHxSmU&list=PLBlnK6fEyqRggZZgYpPMUxdY1CYkZtARR

COURSE REFERENCES

1. https://www.classcentral.com/course/swayam-computer-fundamentals-13950
2. https://onlinecourses.swayam2.ac.in/cec19_cs06/preview
3. https://www.udemy.com/course/introduction-to-the-c-language/
4. https://www.coursera.org/courses?query=c%20programming

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COs	POs												PSO`s	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2	-	-	-	-	-	-	-	-	2	2
CO2	2	2	2	2	2	2	2	-	-	-	-	-	2	2
CO3	2	2	2	2	2	2	2	2	-	-	-	-	2	2
CO4	2	2	2	2	2	2	2	-	-	-	-	-	2	-
CO5	2	2	2	2	2	2	2	2	2	2	2	-	2	2
AVG	2	2	2	2	1.6	1.6	1.6	0.8	0.4	0.4	0.4	-	2	1.6

MAPPING OF COs With POs AND PSOs

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24TA106	தமிழர் மரபு	Version : 1.0
	அறிவியல் மற்றும் மனிதநேயம் தமிழ் துறை	

Programme & Branch	அனைத்து துறைகளுக்கும் பொதுவானது (B.E / B.Tech)	L	T	P	C
		1	0	0	1

முன் கூட்டிய துறைசார் அறிவு: தேவை இல்லை

அலகு - I	மொழி மற்றும் இலக்கியம்	3

இந்திய மொழிக் குடும்பங்கள் - திராவிட மொழிகள் - தமிழ் ஒரு செம்மொழி – தமிழ் செவ்விலக்கியங்கள் - சங்க இலக்கியத்தின் சமயச் சார்பற்றதன்மை – சங்க இலக்கியத்தில் பகிர்தல் அறம் - திருக்குறளில் மேலாண்மைக் கருத்துக்கள் - தமிழக் காப்பியங்கள், தமிழகத்தில் சமண பௌத்த சமயங்களின் தாக்கம் - பக்தி இலக்கியம், ஆழ்வார்கள் மற்றும் நாயன்மார்கள் - சிற்றிலக்கியங்கள் தமிழில் நவீன இலக்கியத்தின் வளர்ச்சி - தமிழ் இலக்கிய வளர்ச்சியில் பாரதியார் மற்றும் பாரதிதாசன் ஆகியோரின் பங்களிப்பு.

அலகு - II	மரபு–பாறை ஓவியங்கள் முதல் நவீன ஓவியங்கள் வரை – சிற்பக்கலை	3

நடுகல் முதல் நவீன சிற்பங்கள் வரை - ஐம்பொன்சிலைகள் - பழங்குடியினர் மற்றும் அவர்கள் தயாரிக்கும் கைவினைப் பொருட்கள், பொம்மைகள் - தேர் செய்யும் கலை – சுடுமண் சிற்பங்கள்- நாட்டுப்புறத் தெய்வங்கள்- குமரிமுனையில் திருவள்ளுவர் சிலை - இசைக் கருவிகள் - மிருதங்கம், பறை, வீணை, யாழ், நாதஸ்வரம் - தமிழர்களின் சமூக பொருளாதார வாழ்வில் கோவில்களின் பங்கு.

அலகு - III	நாட்டுப்புறக் கலைகள் மற்றும் வீர விளையாட்டுகள்	3

தெருக்கூத்து, கரகாட்டம், வில்லுப்பாட்டு, கணியான் கூத்து, ஒயிலாட்டம், தோல்பாவைக் கூத்து, சிலப்பாட்டம், வளரி, புலியாட்டம், தமிழர்களின் விளையாட்டுகள்.

அலகு - IV	தமிழர்களின் திணைக் கோட்பாடுகள்	3

தமிழகத்தின் தாவரங்களும், விலங்குகளும் - தொல்காப்பியம் மற்றும் சங்க இலக்கியத்தில் அகம் மற்றும் புறக்கோட்பாடுகள்- தமிழர்கள் போற்றிய அறக்கோட்பாடு- சங்கக்காலத்தில் தமிழகத்தில் எழுத்தறிவும் கல்வியும் - சங்ககால நகரங்களும் துறைமுகங்களும் - சங்ககாலத்தில் ஏற்றுமதி மற்றும் இறக்குமதி – கடல் கடந்த நாடுகளில் சோழர்களின் வெற்றி.

அலகு - V	இந்திய தேசிய இயக்கம் மற்றும் இந்திய பண்பாட்டிற்குத் தமிழர்களின் பங்களிப்பு	3

இந்திய விடுதலைப் போரில் தமிழர்களின் பங்கு - இந்தியாவின் பிற பகுதிகளில் தமிழ் பண்பாட்டின் தாக்கம் - சுயமரியாதை இயக்கம்- இந்திய மருத்துவத்தில் சித்த மருத்துவத்தின் பங்கு கல்வெட்டுகள் கையெழுத்துப்படிகள்- தமிழ்ப் புத்தங்களின் அச்சு வரலாறு.

TOTAL: 15 PERIODS

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பாடம் கற்றதின் விளைவுகள்:

பாடத்தை வெற்றிகரமாக கற்று முடித்த பிறகு, மாணவர்களால் முடியும் விளைவுகள்

CO1: தமிழ் மொழியின் செந்தன்மை மற்றும் இலக்கியம் குறித்த தெரிதல்.

CO2: தமிழர்களின் சிற்பக்கலை, ஓவியக்கலை மற்றும் இசைக்கருவிகள் குறித்த தெளிவு.

CO3: தமிழர்களின் நாட்டுப்புறக் கலைகள் மற்றும் வீரவிளையாட்டுகள் குறித்த தெளிவு.

CO4: தமிழர்களின் திணைக்கோட்பாடுகள், சங்ககால வணிகம் மற்றும் சோழர்களின் வெற்றிகள் குறித்த தெளிவு.

CO5: இந்திய தேசிய இயக்கம், சுயமரியாதை இயக்கம் மற்றும் சித்த மருத்துவம் பற்றிய புரிதல்.

TEXT BOOKS

1. "தமிழக வரலாறு - மக்களும் பண்பாடும்" கே கே பிள்ளை (வெளியீடு தமிழ்நாடு பாடநூல் மற்றும் கல்வியில் பணிகள் கழகம்) உலக தமிழாராய்ச்சி நிறுவனம், சென்னை, 2022.

2. கணினித்தமிழ் முனைவர் இல. சுந்தரம், விகடன்பிரசுரம், 2016

REFERENCE BOOK

1. கீழடி- வைகை நதிக்கரையில் சங்ககால நகரநாகரிகம் (தொல்லியல் துறை வெளியீடு)

2. பொருநை – ஆற்றங்கரை நாகரிகம் (தொல்லியல் துறை வெளீயிடு

3. Social Life of Tamils (Dr.K.K.Pillay) A joint Publication of TNTB & ESC and RMRL- (in print)

4. Social Life of the Tamils – The Classical Period (Dr. S.Sigaravelu)(Published by: International Institute of Tamil Studies).

MAPPING OF COs With POs AND PSOs

COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	1	-	-	-	-	1	-	1	-	-	-
CO2	-	-	-	-	-	-	-	-	3	1	-	2	-	-	-
CO3	-	-	-	-	-	-	-	-	3	1	-	2	-	-	-
CO4	-	-	-	-	-	-	-	-	1	2	-	2	-	-	-
CO5	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-
AVG	-	-	-	-	1	-	-	-	2.3	1.4	-	1.8	-	-	-

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24CS108	PROGRAMMING IN C LABORATORY		Version : 1.0			
	Common To All B.E/B.Tech Degree					
Programme & Branch	B.E – Computer Science and Engineering		L	T	P	C
			0	0	4	2

COURSE OBJECTIVES

- To Understand and Apply Basic Programming Constructs.
- To Develop Skills in Array and String Manipulations.
- To Demonstrate the Use of Functions in Programming.
- To Analyze and Implement Complex Data Structures Using Pointers.
- To Design and Evaluate Programs for File Management and Command Line Processing.

LIST OF PRACTICAL PROGRAMS

1. Formatted I/O statements, Operators.

2. Decision Making statements: Simple If, If – else, Switch- case.

3. Looping Statements: For, While, Do – while.

4. Single dimensional arrays and multi-dimensional arrays.

5. Operations on Strings.

6. Pass by value and pass by address, Recursion using functions.

7. Structures and nested structures.

8. String handling operations using pointers.

9. Operations on arrays using pointers.

10. File operations using command line arguments.

TOTAL: 60 PERIODS

COURSE OUTCOMES

Upon Completion Of The Course, The Students Will Be Able To

- Develop and debug programs utilizing c programming constructs.
- Implement various operations on arrays and perform string manipulations.
- Create and evaluate recursive functions to solve specific problems.
- Analyze and implement pointer-based operations on arrays and strings.

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- Create programs that include file operations such as reading, writing, and error handling using command line arguments

REFERENCES

1. Byron S. Gottfried, Jitendar Kumar Chhabra, "Programming with C", Tata McGraw Hill Publishing Company., New Delhi, 2018, Fourth edition.

2. Herbert Schildt, "C – The Complete Reference", Tata McGraw Hill Publishing Company, New Delhi, 2010, Fourth edition.

3. PradipDey and Manas Ghosh, "Programming in C", Oxford University Press., New Delhi, 2018

4. Yashavant P. Kanetkar, "Let Us C", BPB Publications., 2017, Sixteenth edition

5. H.M.Deitel, P.J.Deitel, "C How to Program", Pearson Education., New Delhi, 2013, Seventh Edition.

WEB REFERENCES

1. https://www.javatpoint.com/c-programming-language-tutorial
2. https://www.tutorialspoint.com/cprogramming/index.htm

VIDEO REFERENCES

1. https://www.youtube.com/watch?v=udKcT5UPCDs&list=PLJx23jPZ2MP6CKw9h

   9wN2zD_Wu63tr-T

2. https://www.youtube.com/watch?v=j5nkMFsXId4&list=PLCbgvALMG7QWp-
   h_UVGBAFydX5qDyGa2n

COURSE REFERENCES

1. https://archive.nptel.ac.in/courses/106/104/106104128/
2. https://www.shiksha.com/online-courses/c-programming-for-beginners-master-the-c-language-course-udeml653

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MAPPING OF COs WITH POs AND PSOs

COs	POs												PSO`s	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	3	3	1	2	-	-	-	1	1	-	2	3	3
CO2	2	3	3	1	2	-	-	-	1	1	-	2	3	3
CO3	2	3	3	1	2	-	-	-	1	1	-	2	3	3
CO4	2	3	3	1	2	-	-	-	1	1	-	2	3	3
CO5	2	3	3	1	2	-	-	-	1	1	-	2	3	3
AVG	2	3	3	1	2	-	-	-	1	1	-	2	3	3

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24PC109	PHYSICS AND CHEMISTRY LABORATORY			Version : 1.0	
DEPARTMENT OF SCIENCE AND HUMANITIES					
Programme & Branch	Common to all B.E / B.Tech Degree	L	T	P	C
		0	0	4	2

PHYSICS LABORATORY

COURSE OBJECTIVES

- To learn the proper use of various kinds of physics laboratory equipment.

- To learn how data can be collected, presented and interpreted in a clear and concise manner.

- To learn problem solving skills related to physics principles and interpretation of experimental data.

- To determine error in experimental measurements and techniques used to minimize such error.

- To make the student an active participant in each part of all lab exercises.

LIST OF EXPERIMENTS (Any Five Experiments)

1. Determination of rigidity modulus of wire and moment of inertia using Torsional pendulum

2. Determination of Young's modulus using simple harmonic oscillations of cantilever.

3. Determination of Young's modulus using Non-uniform bending method

4. Determination of Young's modulus using Uniform bending method

5. Determination of the wavelength of the diode laser using diffraction grating.

6. Determination of thickness of a thin sheet or wire using Air wedge

7. Determination of Numerical Aperture and acceptance angle using Optical fiber

8. Determination of width of the groove using laser and Compact disc

9. Determination of Band gap of a semiconductor.

REFERENCE BOOKS

1. Dr.G.Senthil Kumar, 'Physics Laboratory Manual', VRB Publishers,2023

2. Dr. P.Mani, 'Physics Laboratory Manual', Dhanam publications,2021

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WEB REFERENCES

1. https://www.studocu.com/en-us/home
2. https://rajeshvcet.home.blog/wp-content/uploads/2022/11/physics-finalised-2022-2023.pdf
3. https://www.studypool.com/documents/35211079/lab-manual-physics-bs3171-21-22
4. https://www.youtube.com/watch?v=M80PXEKeQnM
5. https://www.youtube.com/watch?v=QPiOn4XYqa0

NOTE

1. Laboratory classes on alternate weeks for Physics and Chemistry.
2. 60 % of the listed experiments shall be conducted for the Physics laboratory

CHEMISTRY LABORATORY

COURSE OBJECTIVES

- To inculcate experimental skills to test basic understanding of water quality parameters, such as, acidity, alkalinity, hardness, chloride.
- To induce the students to familiarize with electroanalytical techniques such as, pH metry, potentiometry and conductometry in the determination of impurities in aqueous solutions.
- To demonstrate the synthesis of nanoparticles.

LIST OF EXPERIMENTS (Any Five Experiments)

1. Determination of total, temporary & permanent hardness of water by EDTA method.
2. Determination of alkalinity in water sample.
3. Determination of chloride content of water sample by Argentometric method.
4. Conductometric titration of strong acid vs. strong base.
5. Determination of strength of given hydrochloric acid using pH meter.
6. Estimation of iron content of the given solution using potentiometer.
7. Estimation of sodium and potassium present in water using flame photometer.
8. Preparation of nanoparticles (TiO_2/ZnO/CuO) by Sol-Gel method.
9. Corrosion experiment-weight loss method.

TOTAL: 60 PERIODS

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COURSE OUTCOMES

Upon completion of the course, the students should be able to:

1. Understand the functioning of various Physics laboratory equipment.
2. Understand and analyze scientific information related to the basic concepts in Physics.
3. Analyze problems related to Physics principles individually and collaboratively..
4. Analyse the quality of water samples with respect to their acidity, alkalinity, hardness and DO.
5. Quantitatively analyse the impurities in solution by electro analytical techniques such as pH metry.

REFERENCE BOOKS

6. Dr.G.Senthil Kumar, 'Chemistry Laboratory Manual', VRB Publishers,2023.
7. Dr. A.Ravikrishnan, 'Chemistry Laboratory Manual', Sri Krishna publications, 2021.

WEB REFERENCES

1. https://www.education.com/science-fair/article/measure-size-light-wave/
2. https://vlab.amrita.edu/index.php?sub=1&brch=280&sim=1518&cnt=6
3. https://arunkumard.yolasite.com/resources/6%20Air%20Wedge.pdf
4. https://www.scribd.com/document/511504064/Experiment#:~:text=Total%20hardness%20is%20measured%20by,hardness%2C%20temporary%20hardness%20is%20calc ulated.
5. https://www.slideshare.net/slideshow/alkalinity-of-given-water-samplepdf/256956376
6. https://www.slideshare.net/slideshow/estimation-of-chloride-ion-in-water/256956670

VIDEO REFERENCES

1. https://www.youtube.com/watch?v=vMRwTFVPlCU
2. https://www.youtube.com/watch?v=JhBs_8DrPYo
3. https://www.youtube.com/watch?v=uI17TAUYHhU
4. https://www.youtube.com/watch?v=m8yAALCE0LE
5. https://www.youtube.com/watch?v=CLrgeQzFkGA
6. https://www.youtube.com/watch?v=ya_v3mgr79I

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ONLINE REFERENCES

1. https://www.youtube.com/watch?v=qTVgJm1Ntss
2. https://onlinecourses.nptel.ac.in/noc20_cy17/preview
3. https://www.classcentral.com/subject/chemical-engineering
4. https://www.classcentral.com/course/openlearn-science-maths-technology-laboratory- skills-chemistry-96070

NOTE

- Laboratory classes on alternate weeks for Physics and Chemistry.
- 60 % of the experiments shall be conducted for the course.

MAPPING OF COs With POs AND PSOs

COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	-	-	1	1	1	-	-	-	1	-	-	-
CO2	3	2	2	-	-	1	1	1	-	-	-	1	-	-	-
CO3	3	2	2	-	-	1	1	1	-	-	-	1	-	-	-
CO4	3	2	2	-	-	1	1	1	-	-	-	1	-	-	-
CO5	3	2	2	-	-	1	1	1	-	-	-	1	-	-	-
AVG	3	2	2	-	-	1	1	1	-	-	-	1	-	-	-

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24EN110	COMMUNICATION SKILLS - I	Version : 1.0			
DEPARTMENT OF SCIENCE AND HUMANITIES					
Programme & Branch	Common to all B.E / B.Tech Degree	L	T	P	C
		0	0	2	1

COURSE OBJECTIVES

- To improve the communicative competence of learners

- To help learners use language effectively in academic /work contexts

- To develop various listening strategies to comprehend various types of audio materials likelectures, discussions, videos etc.

- To build on students' English language skills by engaging them in listening, speaking and grammar learning activities that are relevant to authentic contexts.

- To use language efficiently in expressing their opinions via various media.

UNIT - I	INTRODUCTION TO FUNDAMENTALS OF COMMUNICATION	6

Listening - For general information-specific details- conversation: Introduction to classmates - Audio /video (formal & informal); Telephone conversation.

Speaking - Making telephone calls - Self Introduction; Introducing a friend; - politeness strategies- making polite requests, making polite offers, replying to polite requests and offers - understanding basic instructions (filling out a bank application for example).

UNIT - II	NARRATION AND SUMMATION	6

Listening - Listening to podcasts, anecdotes / stories / event narration; documentaries and interviews with celebrities.

Speaking - Narrating personal experiences / events - Talking about current and temporary situations & permanent and regular situations - describing experiences and feelings- engaging in small talk- describing requirements and abilities.

UNIT - III	DESCRIPTION OF A PROCESS PRODUCT	6

Listening - Listen to product and process descriptions; a classroom lecture; and advertisements about products.

Speaking – Picture description- describing locations in workplaces- Giving instruction to use the product- explaining uses and purposes- Presenting a product- describing shapes and sizes and weights-talking about quantities (large & small) - talking about precautions

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UNIT - IV	CLASSIFICATION AND RECOMMENDATIONS	6

Listening – Listening to TED Talks; Listening to lectures - and educational videos.

Speaking – Small Talk; discussing and making plans - talking about tasks - talking about progress - talking about positions and directions of movement-talking about travel preparations-talking about transportation.

UNIT - V	EXPRESSION	6

Listening – Listening to debates/ discussions; different viewpoints on an issue; and paneldiscussions.

Speaking –making predictions- talking about a given topic-giving opinions-understanding awebsite-describing processes

TOTAL: 30 PERIODS

COURSE OUTCOMES

At the end of the course, learners will be able to

CO1 - Listen and comprehend general as well as complex academic information

CO2 - Listen and understand different points of view in a discussion

CO3 - Speak fluently and accurately in formal and informal communicative contexts

CO4 - Describe products and processes and explain their uses and purposes clearly and accurately

CO5 - Express their opinions effectively in both formal and informal discussions

NOTE

Internal mode only.

E- RESOURCES

1. https://www.youtube.com/watch?v=UEYCOq9wcvc&pp=ygUgcHJvZHVjdCBhbmQgcHJvY2VzcyBkZXNjcmlwdGlvbiA%3D

2. https://www.youtube.com/watch?v=Kz2Eq7bZ41U&pp=ygUQUEFORUwgRElTQ1VTU0lPTg%3D%3D

3. https://www.youtube.com/watch?v=QgjkjsqAzvo&pp=ygURU0VMRiBJTlRST0RVQ1RJT04%3D

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COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	1	-	-	-	-	1	-	1	-	-	-
CO2	-	-	-	-	-	-	-	-	3	1	-	2	-	-	-
CO3	-	-	-	-	-	-	-	-	3	1	-	2	-	-	-
CO4	-	-	-	-	-	-	-	-	1	2	-	2	-	-	-
CO5	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-
AVG	-	-	-	-	1	-	-	-	2.3	1.4	-	1.8	-	-	-

MAPPING OF COs With POs AND PSOs

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24EN201	TECHNICAL ENGLISH – II	Version : 1.0			
	DEPARTMENT OF SCIENCE AND HUMANITIES				
Programme & Branch	Common to all B.E / B.Tech Degree	L	T	P	C
		3	0	0	3

COURSE OBJECTIVES

The course is intended to

- Engage learners in meaningful language activities to improve their reading and writing skills

- Learn various reading strategies and apply in comprehending documents in professional context.

- Help learners understand the purpose, audience, contexts of different types of writing

- Develop analytical thinking skills for problem solving in communicative contexts

- Demonstrate an understanding of job applications and interviews for internship and placements

UNIT - I	MAKING COMPARISONS	9

Soft Skills – Effective communication – Mastering the art of conveyance. Reading - Reading advertisements, user manuals, brochures; Writing – Professional emails, Email etiquette - Compare and Contrast Essay; Grammar – Auxiliary verbs, Prepositional phrases, Vocabulary- Contextual meaning of words.

UNIT - II	EXPRESSING CAUSAL RELATIONS IN SPEAKING AND WRITING	9

Soft Skills – Time Management: Balancing multiple responsibilities. Reading - Reading longer technical texts– Cause and Effect Essays, and Letters / emails of complaint, Writing - Writing responses to complaints. Grammar - Active Passive Voice transformations, Infinitive and Gerunds, Conjunctions.

UNIT - III	PROBLEM SOLVING	9

Soft Skills – Team Building and Collaboration: Fostering positive team dynamics. Reading - Case Studies, excerpts from literary texts, news reports etc. Writing – Letter to the Editor, Checklists, Problem solution essay / Argumentative Essay. Grammar – Error correction; If conditional sentences, Vocabulary- Compound words, Sentence Completion, Misspelled words, Sequencing Jumbled Sentences.

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UNIT – IV	REPORTING OF EVENTS AND RESEARCH	9
Soft Skills – Critical Thinking: ability to analyse, evaluate ideas & argument. Reading – Newspaper articles; Writing – Recommendations, Transcoding, Accident Report, Survey Report Grammar – Reported Speech, Modals Vocabulary – Conjunctions - use of prepositions.		
UNIT - V	THE ABILITY TO PUT IDEAS OR INFORMATION COGENTLY	9
Soft Skills – Leadership: Ability to influence and guide to common goal or vision. Reading – Company profiles, Statement of Purpose, (SOP), an excerpt of interview with professionals; Writing – Job / Internship application – Cover letter & Resume; Grammar – Numerical adjectives, Relative Clauses.		

TOTAL: 45 PERIODS

LEARNING OUTCOMES

At the end of the course, learners will be able to

- Compare and contrast products and ideas in technical texts.
- Identify and report cause and effects in events, industrial processes through technical texts.
- Analyze problems in order to arrive at feasible solutions and communicate them orally and in the written format.
- To present their ideas and opinions in a planned and logical manner.
- Draft effective resumes in the context of job search.

TEXT BOOKS

1. English for Engineers & Technologists (2020 edition) Orient Blackswan Private Ltd. Department of English, Anna University.

2. English for Science & Technology Cambridge University Press 2021.

3. Authored by Dr. Veena Selvam, Dr. Sujatha Priyadarshini, Dr. Deepa Mary Francis, Dr. KN.Shoba, and Dr. Lourdes Joevani, Department of English, Anna University.

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REFERENCE BOOKS

1. Raman. Meenakshi, Sharma. Sangeeta (2019). Professional English. Oxford university press. New Delhi.

2. Improve Your Writing ed. V.N. Arora and Laxmi Chandra, Oxford Univ. Press, 2001, New Delhi.

3. Learning to Communicate – Dr. V. Chellammal. Allied Publishers, New Delhi, 2003

4. Business Correspondence and Report Writing by Prof. R.C. Sharma & Krishna Mohan, TataMcGraw Hill & Co. Ltd., 2001, New Delhi.

5. Developing Communication Skills by Krishna Mohan, Meera Bannerji- Macmillan India Ltd. 1990,Delhi.

E – RESOURCES

- https://www.youtube.com/watch?v=x60GHpQ8gJk&list=PLWPirh4EWFpFIElSxplDlEhRDZHkBD-0n

- https://www.youtube.com/playlist?list=PLCcteVWYyBtteZ69xEH2HG-hwK5ZuNvHc

MAPPING OF COs With POs AND PSOs

COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	1	-	-	-	-	-	1	2	3	-	2	-	-	-
CO2	-	-	-	-	-	-	1	-	3	3	-	3	-	-	-
CO3	-	1	1	-	-	-	-	-	3	3	-	3	-	-	-
CO4	-	-	-	-	-	-	-	-	2	3	-	2	-	-	-
CO5	-	-	-	-	-	-	-	-	2	3	-	2	-	-	-
AVG	-	1	1	-	-	-	-	-	2.4	3	-	2.4	-	-	-

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24MA202	STATISTICS AND NUMERICAL METHODS	Version : 1.0			
	DEPARTMENT OF SCIENCE AND HUMANITIES				
Programme & Branch	Common to all B.E / B.Tech Degree	L	T	P	C
		3	1	0	4

COURSE OBJECTIVES

- To introduce fundamental concepts in Probability, hypothesis testing, Experimental Design, Numerical methods for equations, Interpolation, Numerical Integration, and Differential Equations.
- To equip students with practical skills in applying Statistical Methods like Chi-Square, ANOVA, and Numerical Techniques such as Newton - Raphson, Runge-Kutta, and Interpolation Methods.
- To develop Analytical thinking and problem-solving abilities in handling complex Mathematical and Statistical Problems in Engineering and Scientific contexts.
- To prepare students for advanced studies and professional careers where knowledge of Advanced Mathematical Techniques and Statistical analysis is essential.
- To foster an understanding of the importance and applications of mathematical modeling and computational methods in diverse fields.

UNIT - I	PROBABILITY AND TESTING OF HYPOTHESIS	9+3

Probability–Basic definitions of probability – Total probability theorem(Statement only) - Axioms of probability - conditional probability- Baye's theorem (statement and problems only)- Sampling distribution- large and small samples(Concept only) – Chi-square test for goodness of fit – Independence of attributes.

UNIT - II	DESIGN OF EXPERIMENTS	9+3

Analysis of variance (ANOVA) - Completely Randomized Design – Randomized Block Design – Latin Square Design.

UNIT - III	SOLUTION OF EQUATIONS AND EIGENVALUE PROBLEMS	9+3

Solution of Algebraic and Transcendental Equations– Newton Raphson method- Solution of linear system of equations - Gauss Elimination method – Pivoting - Gauss Jordan method – Iterative methods of Gauss Jacobi and Gauss Seidel – Eigen values of a matrix by Power method.

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UNIT – IV	INTERPOLATION AND NUMERICAL INTEGRATION	9+3

Lagrange's Interpolation -Newton's forward and backward difference interpolation - Newton's divided difference interpolations –Numerical integration: single and double integrals using Trapezoidal and Simpson's rules.

UNIT - V	NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS	9+3

Single step methods: Taylor's series method - Euler's method - Modified Euler's method - Fourth order Runge-Kutta method for solving first order differential equations - Multi step methods: Milne's and Adams - Bash forth predictor corrector methods for solving first order differential equations.

TOTAL: 60 PERIODS

COURSE OUTCOMES

Upon successful completion of the course, students will be able to:

CO1: Demonstrate proficiency in applying Probability Theory and hypothesis testing methods to Analyze data and make informed decisions.

CO2: Design and conduct experiments using various Experimental Designs, Analyze Variance, and Interpret Experimental results

CO3: Acquire practical skills in solving Algebraic and Transcendental equations, computing Eigen values and applying Numerical Integration Techniques.

CO4: Demonstrate competence in using Interpolation methods to approximate Functions and Numerical Methods to solve Ordinary differential equations.

CO5: Develop the ability to critically evaluate mathematical models, assess numerical accuracy, and apply appropriate methods to solve real-world problems in their field of study.

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TEXT BOOKS

1. Grewal, B.S., and Grewal, J.S., "Numerical Methods in Engineering and Science", Khanna Publishers, 10th Edition, New Delhi, 2015.

2. Curtis F. Gerald, Patrick. Wheatley, "Applied numerical analysis", Pearson Education publication, 7th edition, 2012.

3. S. P. Gupta, "Statistical Methods", Sultan Chands and Sons, 44th edition, 2014.

REFERENCE BOOKS

1. Burden, R.L and Faires, J.D, "Numerical Analysis", 9th Edition, Cengage Learning, 2016.

2. Devore. J.L., "Probability and Statistics for Engineering and the Sciences", Cengage Learning, New Delhi, 8th Edition, 2014.

3. Gerald. C.F. and Wheatley. P.O. "Applied Numerical Analysis" Pearson Education, Asia, New Delhi, 7th Edition, 2007.

4. Gupta S.C. and Kapoor V. K., "Fundamentals of Mathematical Statistics", Sultan Chand & Sons, New Delhi, 12th Edition, 2020.

5. Spiegel. M.R., Schiller. J. and Srinivasan. R.A., "Schaum's Outlines on Probability and Statistics ", Tata McGraw Hill Edition, 4th Edition, 2012.

6. Walpole. R.E., Myers. R.H., Myers. S.L. and Ye. K., "Probability and Statistics for Engineers and Scientists", 9th Edition, Pearson Education, Asia, 2010.

WEB REFERENCE

- https://www.ucl.ac.uk/~rmjbale/Stat/2.pdf

- https://www.atmos.albany.edu/facstaff/timm/ATM315spring14/R/IPSUR.pdf

- https://www.stat.auckland.ac.nz/~fewster/325/notes/ch2annotated.pdf

- https://documentviewer.herokuapp.com/?state=%7B%22ids%22:%5B%221qXjHIB0IFllEJZ0 P3LKqi4yfhGusbqrP%22%5D,%22action%22:%22open%22,%22userId%22:%22103047595 551916871878%22,%22resourceKeys%22:%7B%7D%7D

- https://drive.google.com/file/d/1P43ac42aJ8zqBSPbLJK1bHZ12JJYyPAT/view?usp=sharing

- https://drive.google.com/file/d/1qXjHIB0IFllEJZ0P3LKqi4yfhGusbqrP/view?usp=drive_link

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VIDEO REFERENCE

- https://www.youtube.com/watch?v=V3iEsLPAD68&list=PLU6SqdYcYsfLRq3tug_hvkHDcorrtcBK
- https://www.youtube.com/watch?v=VCCH9mvGHu4&list=PLOmHrZkA584_AljHMHktLuuqulBLF00xa
- https://www.youtube.com/watch?v=9dFWkDhw7CQ&t=107s&pp=ygUgc3RhdGlzdGljyBhbmQgbnVtZXJpY2FsIG1ldGhvZHM%3D
- https://www.youtube.com/watch?v=c29S3dpHaNk&list=PLkLKUGSSZo5e1qTAvFFUAJb5TaizAR-jF
- https://www.youtube.com/watch?v=d9loVslsqIA&pp=ygUgc3RhdGlzdGljyBhbmQgbnVtZXJpY2FsIG1ldGhvZHM%3D

ONLINE REFERENCE

- https://onlinecourses.nptel.ac.in/noc21_ma45/preview
- https://onlinecourses.nptel.ac.in/noc21_ma74/preview

MAPPING OF COs With POs AND PSOs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	1	0	0	0	0	0	0	0	0	0	-	-
CO2	3	3	1	0	0	0	0	0	0	0	0	0	-	-
CO3	3	3	1	0	0	0	0	0	0	0	0	0	-	-
CO4	3	3	1	0	0	0	0	0	0	0	0	0	-	-
CO5	3	3	1	0	0	0	0	0	0	0	0	0	-	-
AVG	3	3	1	0	0	0	0	0	0	0	0	0	-	-

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24PH205	MATERIALS SCIENCE	Version : 1.0
	DEPARTMENT OF SCIENCE AND HUMANITIES	

Programme & Branch	Common to B.E - Automobile, Civil & Mechanical	L	T	P	C
		3	0	0	3

COURSE OBJECTIVES

- To make the students to understand the basics of crystallography and its importance in studying materials properties.
- To understand the electrical properties of materials including free electron theory, applications of quantum mechanics and magnetic materials.
- To instill knowledge on physics of semiconductors, determination of charge carriers and device applications.
- To establish a sound, grasp of knowledge on different optical properties of materials, optical displays and applications.
- To inculcate an idea of significance of nanostructures, quantum confinement and ensuing nano device applications.

UNIT - I	CRYSTALLOGRAPHY	9

Single crystalline, polycrystalline and amorphous materials – single crystals: unit cell, directions and planes in a crystal- Procedure to find Miller indices –Relation between Miller Indices and Inter-planar distances - Coordination number and packing factor for SC, BCC and FCC structures - crystal imperfections: point defects and line defects.

UNIT - II	ELECTRICAL AND MAGNETIC PROPERTIES OF MATERIALS	9

Classical free electron theory - Expression for electrical conductivity – Expression for Thermal conductivity – Wiedemann Franz law- Density of energy states (Derivation)– Carrier concentration in metals. Magnetic materials:- Dia, para and ferromagnetic materials–Domain theory and energies involved in domain growth – HDD with GMR sensor.

UNIT - III	SEMICONDUCTOR AND TRANSPORT PHYSICS	9

Classification of Semiconductors–direct and indirect band gap semiconductors–Carrier concentration in intrinsic semiconductors – Carrier concentration in N-type and P-type semiconductors–Hall Effect and its applications

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UNIT – IV	OPTICAL PROPERTIES OF MATERIALS	9

Classification of optical materials – Carrier generation and recombination – Optoelectronic devices: light detectors and solar cells – light emitting diode – laser diode - optical processes in organic semiconductor devices – Electro-optics and nonlinear optics.

UNIT - V	NANO DEVICES	9

Quantum confinement – Quantum structures: quantum wells, wires and dots – Band gap of nano materials – Single electron phenomena – Single electron Transistor-Carbon nanotubes: Properties and applications.

TOTAL: 45 PERIODS

COURSE OUTCOMES

At the end of the course the students should be able to

CO1: Remember the basics of crystallography and its importance for studying various materials properties

CO2: Understand the electrical and magnetic properties of materials and their applications

CO3: Understand clearly about semiconductor physics and functioning of semiconductor devices

CO4: Understand the optical properties of materials and working of various optical devices

CO5: Analyze the importance of functional nanoelectronic devices.

TEXT BOOKS

1. A.Marikani, 'Materials Science', PHI learning Private Ltd. Delhi, 2021

2. Dr.R.Suresh 'Materials Science', Sri Krishna Hitech Publications,2023

3. Dr. P.Mani, 'A Textbook on Materials Science', Dhanam publications,2021

4. Dr.G.Senthil Kumar & Dr. S.Murugavel, 'Materials Science', VRB Publishers,2023.

REFERENCE BOOKS

1. Charles Kittel, 'Introduction to solid state Physics', John Wiley & sons

2. Laszlo Solymar, Walsh, Donald, Syms and Richard R.A.,' Electrical Properties of Materials", Oxford Univ. Press (Indian Edition) 2022.

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3. Jasprit Singh, "Semiconductor Optoelectronics: Physics and Technology", McGraw- Hill Education (Indian Edition), 2019.

4. S.L.Gupta & R.V.Kumar,'Solid State Physics', K.Nath & Co. educational Publishers,2009

5. S.M.Sze, 'Physics of semiconductor devices', John Wiley & sons,2004

6. G.W.Hanson. "Fundamentals of Nanoelectronics". Pearson Education(Indian Edition),2022

WEB REFERENCES

1. https://www.poriyaan.in/paper/materials-science-16/

2. https://n.stucor.in/semester/STUCOR_PH3251-DG.pdf

3. https://www.youtube.com/watch?v=9f-EA1pYDDY

4. https://www.youtube.com/watch?v=X-FMsYDTl5I

5. https://www.youtube.com/watch?v=ei_jTRKgA2Y

MAPPING OF COs With POs AND PSOs

COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	1	-	-	-	-	-	-	-	-	1	-	-
CO2	3	2	2	2	-	-	-	-	-	1	-	-	1	-	-
CO3	3	2	2	1	-	-	-	-	-	1	-	2	1	1	-
CO4	3	1	1	1	-	-	-	-	-	-	-	2	1	1	-
CO5	3	2	2	1	-	-	-	-	-	1	-	-	-	-	-
AVG	3	1.6	1.6	1.2	-	-	-	-	-	1	-	2	1	1	-

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24GE204	ENGINEERING GRAPHICS			Version : 1.0	
DEPARTMENT OF MECHANICAL ENGINEERING					
Programme & Branch	Common to B.E - Mechanical, Automobile & Civil	L	T	P	C
		2	0	2	3
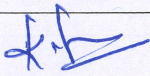
COURSE OBJECTIVES

- To develop foundational skills in geometrical constructions and plane curves.
- To understand and apply principles of orthographic projection.
- To learn techniques for projecting simple solids with inclinations.
- To understand the sectioning and development of various solid shapes.
- To gain knowledge in creating pictorial projections of solid objects

UNIT - I	PLANE CURVES	9

Basic Geometrical constructions, Curves used in engineering practices: Conics. Construction of ellipse, parabola and hyperbola by eccentricity method Construction of cycloid, construction of involutes of square and circle. Drawing of tangents and normal to the above curves.

UNIT - II	ORTHOGRAPHIC PROJECTION	9

Orthographic projection- Principles-Principal Planes-First angle projection-projection of points. Projection of straight lines (only First angle projections) inclined to both the principal planes Determination of true lengths and true inclinations by rotating line method and traces Projection of planes (polygonal and circular surfaces) inclined to both the principal planes by rotating object method.

UNIT - III	PROJECTION OF SOLIDS	9

Projection of simple solids like prisms, pyramids, cylinder, cone and truncated solids when the axis is inclined to one of the principal planes by rotating object method.

UNIT - IV	SECTIONS AND DEVELOPMENT	9

Sectioning of above solids in simple vertical position when the cutting plane is inclined to the one of the principal planes and perpendicular to the other obtaining true shape of section. Development of lateral surfaces of simple and sectioned solids, Prisms, pyramids cylinders and cones.
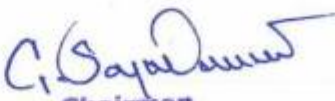
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UNIT - V	ISOMETRIC PROJECTIONS	9

Principles of isometric projection, isometric scale. Isometric projections of simple solids and truncated solids Prisms, pyramids, cylinders, cones- combination of two solid objects in simple vertical positions.

TOTAL: 60 PERIODS

COURSE OUTCOMES

Upon completion of the course, the students will be able to:

- Execute accurate geometrical constructions and draw common engineering curves.
- Create detailed orthographic projections of points, lines, and planes.
- Project and visualize simple solids from different angles using standard methods.
- Section and develop the surfaces of solids to represent true shapes.
- Produce isometric and perspective projections for various engineering applications.

TEXT BOOKS

1. Bhatt N.D. and Panchal V.M., "Engineering Drawing", Charotar Publishing House, 53rd Edition, 2019.

2. Natarajan K.V., "A Text Book of Engineering Graphics", Dhanalakshmi Publishers, Chennai, 2018.

REFERENCE BOOKS

1. Basant Agarwal and Agarwal C.M., "Engineering Drawing", McGraw Hill, 2nd Edition, 2019.
2. Gopalakrishna K.R., "Engineering Drawing" (Vol. I&II combined), Subhas Publications, Bangalore, 27th Edition, 2017.
3. Luzzader, Warren.J. and Duff,John M., "Fundamentals of Engineering Drawing with an introduction to Interactive Computer Graphics for Design and Production, Eastern Economy Edition, Prentice Hall of India Pvt. Ltd, New Delhi, 2005.
4. Parthasarathy N. S. and Vela Murali, "Engineering Graphics", Oxford University, Press, New Delhi, 2015.

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COs	POs												PSOs	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	3	2	3	2	2	2	2	1	1	-	2	2	2
CO2	2	3	2	3	2	1	2	1	1	2	-	2	2	2
CO3	2	3	2	3	2	1	2	2	2	2	-	2	2	2
CO4	2	3	2	3	1	1	2	1	2	2	-	2	2	2
CO5	2	3	2	3	1	2	1	1	1	1	-	2	2	2
AVG	2.00	3.00	2.00	3.00	1.60	1.40	1.80	1.40	1.40	1.60	-	2.00	2.00	2.00

MAPPING OF COs With POs AND PSOs

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24EE201	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	Version : 1.0			
Common to all B.E/B.Tech Degree					
Programme & Branch	B.E – ELECTRICAL AND ELECTRONICS ENGINEERING	L	T	P	C
		3	0	0	3

COURSE OBJECTIVES

- To impart knowledge in the basics of wiring methods
- To introduce the basics of DC machines
- To impart knowledge in the basics of working principles and application of AC machines
- To introduce and their characteristics and fundamental concepts of digital electronics
- To introduce the functional elements and working of measurements and instruments

UNIT - I	BASICS OF WIRING	9

Introduction - Types of wiring (open/Concealing type) - Symbols and IE rules - types of wires and cables – Earthing methods -– Electrical wiring accessories – Service connection (Single Phase & Three Phase) - Protective devices (Fuse, MCB, ELCB, RCCB) – Safety precautions and First Aid.

UNIT - II	DC MACHINES	9

Dynamically induced E.M.F- Fleming's right hand rule - Construction and Working principle of DC Generators, EMF equation-Types and Applications- Construction and Principle of DC motors- Types and Applications – Necessity of starters and Types of stator- speed control of DC motors, characteristics & applications of DC motors - electric braking.

UNIT - III	AC MACHINES	9

Constructional details of single phase induction motor -Types of single-phase induction motors - Universal motor - stepper motors - working principle and construction details of three Phase Induction motor - working principle and construction details of single Phase & three Phase Transformer and its Applications.

UNIT - IV	ANALOG AND DIGITAL ELECTRONICS	9

Resistor – Colour Coding - Inductor and Capacitor in Electronic Circuits- Silicon & Germanium – PN Junction Diodes, Zener Diode –Characteristics and Applications-BJT construction and working principle -UPS and SMPS. Combinational logic gates (AND, OR, NOT)-Truth table - representation of logic functions.

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UNIT - V	MEASUREMENTS AND INSTRUMENTATION	9

Functional elements of an instrument, Standards and calibration, Error and types-Operating Principle, types Moving Coil and Moving Iron meters-wattmeter- Energy Meter - Block diagram -Types of sensors - Smart sensors- solenoid contractor (NC/NO)

TOTAL: 45 PERIODS

COURSE OUTCOMES

1. After completing this course, the students will be able to
2. Compute the basic fundamentals of electrical
3. Explain the working principle and applications of DC machines
4. Analyze the characteristics of AC machines
5. Explain the basic concepts of analog and digital electronics
6. Explain the operating principles of measuring instruments

TEXT BOOKS

1. Kothari DP and I.J Nagrath, "Basic Electrical and Electronics Engineering", Second Edition, McGraw Hill Education, 2020
2. S. K. Bhattacharya "Basic Electrical and Electronics Engineering", Pearson Education, Second Edition, 2017.
3. Sedha R.S., "A textbook book of Applied Electronics", S. Chand & Co., 2008
4. James A. Svoboda, Richard C. Dorf, "Dorf's Introduction to Electric Circuits", Wiley, 2018.
5. A.K. Sawhney, Puneet Sawhney 'A Course in Electrical & Electronic Measurements & Instrumentation', Dhanpat Rai and Co,

REFERENCE BOOKS

1. Kothari DP and I.J Nagrath, "Basic Electrical Engineering", Fourth Edition, McGraw Hill Education, 2019.
2. Thomas L. Floyd, 'Digital Fundamentals', 11th Edition, Pearson Education, 2017.
3. Albert Malvino, David Bates, 'Electronic Principles, McGraw Hill Education; 7th edition, 2017.
4. Mahmood Nahvi and Joseph A. Edminister, "Electric Circuits", Schaum' Outline Series, McGraw Hill, 2002.
5. H.S. Kalsi, 'Electronic Instrumentation', Tata McGraw-Hill, New Delhi, 2010

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WEB REFERENCES

1. https://www.electrical4u.com/electrical-engineering-materials/
2. https://mrcet.com/downloads/digital_notes/hs/beee%20digital%20notes%202020.pdf
3. https://www.maritimeknowledge.in/course-details.php?course_id=125&course_name=BasicElectricalandElectronicsEngineering

COURSE REFERENCES

1. https://archive.nptel.ac.in/courses/108/105/108105053/
2. https://nptel.ac.in/courses/108108076
3. https://onlinecourses.nptel.ac.in/noc22_ee113/preview

MAPPING OF COs With POs AND PSOs

COs	POs												PSO`s		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	2	-	-	-	1	-	-	-	2	-	-	1
CO2	3	2	1	2	-	-	-	1	-	-	-	2	-	-	1
CO3	3	1	1	1	-	-	-	1	-	-	-	2	-	-	1
CO4	3	2	1	2	-	-	-	1	-	-	-	2	-	-	1
CO5	3	2	1	2	-	-	-	1	-	-	-	2	-	-	1
AVG	3	1.8	1	1.8	-	-	-	1	-	-	-	2	-	-	1

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24TA206	தமிழரும் தொழில் நுட்பமும்			Version : 1.0		
	அறிவியல் மற்றும் மனிதநேயம் தமிழ் துறை					
Programme & Branch	**அனைத்து துறைகளுக்கும் பொதுவானது (B.E / B.Tech)**	**L**	**T**	**P**		**C**
		1	0	0		1

முன் கூட்டிய துறைசார் அறிவு: தேவை இல்லை

அலகு - I	நெசவு மற்றும் பானைத் தொழில்நுட்பம்	3

சங்க காலத்தில் நெசவு தொழில்- பானைத் தொழில் நுட்பம் கருப்பு சிவப்பு பாண்டங்கள்- பாண்டங்களில் கீறல் குறியீடுகள்.

அலகு - II	வடிவமைப்பு மற்றும் கட்டிட தொழில்நுட்பம்	3

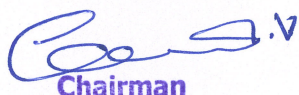சங்க காலத்தில் வடிவமைப்பு மற்றும் கட்டுமானங்கள் & சங்க காலத்தில் வீட்டுப் பொருட்களில் வடிவமைப்பு - சங்க காலத்தில் கட்டுமான பொருட்களும் நடுகல்லும் - சிலப்பதிகாரத்தில் மேடை அமைப்பு பற்றிய விவரங்கள் - மாமல்லபுர சிற்பங்களும், கோவில்களும் - சோழர் காலத்து பெருங்கோவில்கள் மற்றும் பிற வழிபாட்டு தலங்கள் - நாயக்கர் காலக் கோவில்கள் - மாதிரி கட்டமைப்புகள் பற்றி அறிதல், மதுரை மீனாட்சி அம்மன் ஆலயம் மற்றும் திருமலை நாயக்கர் மஹால் - செட்டிநாட்டு வீடுகள் - பிரிட்டிஷ் காலத்தில் சென்னை இந்தோ – சாராசெனிக் கட்டிடக் கலை

அலகு - III	உற்பத்தித் தொழில்நுட்பம்	3

கப்பல் கட்டும் கலை — உலோகவியல் - இரும்புத்தொழிற்சாலை - இரும்பை உருக்குதல், எஃகு – வரலாற்றுச் சான்றுகளாக செம்பு மற்றும் தங்கநாணயங்கள் - நாணயங்கள் அச்சடித்தல் - மணி உருவாக்கும் தொழிற்சாலைகள் - கல் மணிகள் - கண்ணாடி மணிகள் - சுடுமண் மணிகள் சங்கு மணிகள் - எலும்புத் துண்டுகள் - தொல்லியல் சான்றுகள் - சிலப்பதிகாரத்தில் மணிகளின் வகைகள்.

அலகு - IV	வேளாண்மை மற்றும் நீர்ப்பாசன தொழில்நுட்பம்	3

அணை, ஏரி, குளங்கள், மதகு - சோழர்கால குமிழித்தும்பின் முக்கியத்துவம் - கால்நடை பராமரிப்பு — கால்நடைகளுக்காக வடிவமைக்கப்பட்ட கிணறுகள் - வேளாண்மை மற்றும் வேளாண்மை சார்ந்த செயல்பாடுகள் - கடல்சார் அறிவு – மீன் வளம் - முத்து மற்றும் முத்துக்குளித்தல் - பெருங்கடல் குறித்த பண்டைய அறிவு – அறிவுசார் சமூகம்.

அலகு - V	அறிவியல் தமிழ் மற்றும் கணினித்தமிழ்	3

அறிவியல் தமிழின் வளர்ச்சி - கணினித்தமிழ் வளர்ச்சி –தமிழ் நூல்களை மின்பதிப்பு செய்தல் - தமிழ் மென்பொருட்கள் உருவாக்கம் - தமிழ் இணையக்கல்வி கழகம் - தமிழ் மின் நூலகம் - இணையத்தில் தமிழ் அகராதிகள் சொற்குவைத்திட்டம் .

TOTAL: 15 PERIODS

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பாடம் கற்றதின் விளைவுகள்:

பாடத்தை வெற்றிகரமாக கற்று முடித்த பிறகு, மாணவர்களால் முடியும் விளைவுகள்

CO1: சங்ககால தமிழர்களின் நெசவு மற்றும் பானை வனைதல் தொழில் நுட்பம் குறித்து கற்றுணர்தல்.

CO2: சங்ககால தமிழர்களின் கட்டிட தொழில்நுட்பம் கட்டுமான பொருட்கள் மற்றும் அவற்றை விளக்கும் தளங்கள் குறித்து அறிவு

CO3: சங்ககால தமிழர்களின் உலோகத் தொழில், நாணயங்கள் மற்றும் மணிகள் சார்ந்த தொல்லியல் சான்றுகள் பற்றிய அறிவு.

CO4: சங்ககால தமிழர்களின் வேளாண்மை, நீர்ப்பாசன முறைகள் மற்றும் முத்துக்குளித்தல் குறித்த தெளிவு.

CO5: நவீன அறிவியல் தமிழ் மற்றும் கணினித்தமிழ் குறித்த புரிந்துகொள்ளலும் மற்றும் பயன்படுத்தலும்.

RFERENCE BOOKS

1. "தமிழக வரலாறு - மக்களும் பண்பாடும்" கே கே பிள்ளை (வெளியீடு தமிழ்நாடு பாடநூல் மற்றும் கல்வியில் பணிகள் கழகம்) உலக தமிழாராய்ச்சி நிறுவனம், சென்னை, 2022.
2. "கணினித்தமிழ்" முனைவர் இல. சுந்தரம், விகடன்பிரசுரம், 2016.
3. கீழடி- வைகை நதிக்கரையில் சங்ககால நகரநாகரிகம் (தொல்லியல் துறை வெளியீடு).
4. பொருநை – ஆற்றங்கரை நாகரிகம் (தொல்லியல் துறை வெளியீடு).

MAPPING OF COs With POs AND PSOs

COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	1	-	-	-	-	1	-	1	-	-	-
CO2	-	-	-	-	-	-	-	-	3	1	-	2	-	-	-
CO3	-	-	-	-	-	-	-	-	3	1	-	2	-	-	-
CO4	-	-	-	-	-	-	-	-	1	2	-	2	-	-	-
CO5	-	-	-	-	-	-	-	-	-	2	-	2	-	-	-
AVG	-	-	-	-	1	-	-	-	2.3	1.4	-	1.8	-	-	-

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24EE202	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING LABORATORY	Version : 1.0			
	Common to all B.E/B.Tech Degree				
Programme & Branch	B.E – ELECTRICAL AND ELECTRONICS ENGINEERING	L	T	P	C
		0	0	4	2

COURSE OBJECTIVES

- To train the students in conducting load tests on electrical machines
- To gain practical experience in characterizing electronic devices
- To train the students to use DSO for measurements.

LIST OF EXPERIMENT

1. Verification of ohms and Kirchhoff's Laws.

2. Load test on DC Shunt Motor.

3. Load test on Shunt Generator

4. Load test on Single Phase Transformer

5. Load Test on Single Phase Induction Motor

6. Load test on three phase Induction Motor

7. Measurement of three phase power by using two wattmeter method.

8. Characteristics of PN and Zener Diodes

9. Design and analysis of Half wave and Full Wave rectifiers

10. Measurement of displacement of LVDT.

11. Study the necessity of starters.

TOTAL: 60 PERIODS
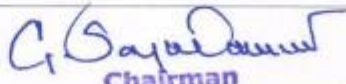
COURSE OUTCOMES

After completing this course, the students will be able to

1. Use experimental methods to verify the Ohm's law and Kirchhoff's Law and to measure three phase power

2. Analyze experimentally the load characteristics of electrical machines

3. Analyze the characteristics of basic electronic devices
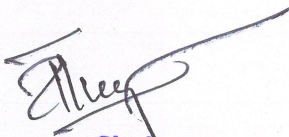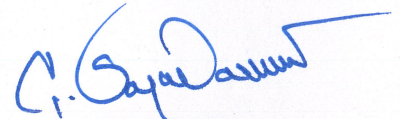
4. Use LVDT to measure displacement

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WEB REFERENCES
1. https://www.vlab.co.in/broad-area-electrical-engineering
2. http://vlabs.iitkgp.ernet.in/be/index.html

VIDEO REFERENCES
1. https://www.vlab.co.in/broad-area-electrical-engineering
2. https://www.pathlms.com/siam/courses/480/sections/730
3. https://www.nih.gov/news-events/videos/virtual-ep-lab-there-better-way
1. https://nvl-au.vlabs.ac.in/

MAPPING OF COs With POs AND PSOs

COs	POs												PSO`s		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	-	-	-	-	1	-	-	-	2	-	-	1
CO2	3	2	1	-	-	-	-	1	-	-	-	2	-	-	1
CO3	3	1	1	-	-	-	-	1	-	-	-	2	-	-	1
CO4	3	2	1	-	-	-	-	1	-	-	-	2	-	-	1
CO5	3	2	1	-	-	-	-	1	-	-	-	2	-	-	1
AVG	3	1.8	1	-	-	-	-	1	-	-	-	2	-	-	1

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24EP203	ENGINEERING PRACTICES LABORATORY	Version : 1.0			
Programme & Branch	**B.E – CIVIL, MECHNANICAL, ECE & EEE ENGINEERING**	L	T	P	C
		0	0	4	2

COURSE OBJECTIVES:

The main learning objective of this course is to provide hands on training to the students in:

- Drawing pipe line plan; laying and connecting various pipe fittings used in common household plumbing work; Sawing; planning; making joints in wood materials used in common household woodwork.

- Wiring various electrical joints in common household electrical wire work.

- Welding various joints in steel plates using arc welding work; Machining various simple processes like turning, drilling, tapping in parts; Assembling simple mechanical assembly of common household equipment's; Making a tray out of metal sheet using sheet metalwork.

- Soldering and testing simple electronic circuits; Assembling and testing simple electronic components on PCB.
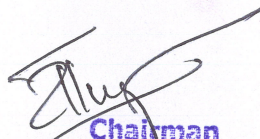
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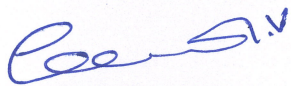(Autonomous)
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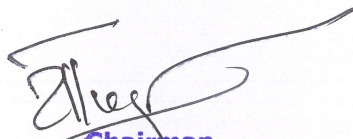T.N.Palayam, Gobi (Tk),
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GROUP-A (CIVIL & MECHANICAL ENGINEERING PRACTICES)		
PART - I	**CIVIL ENGINEERING PRACTICES**	**15**
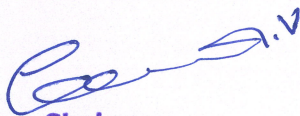
PLUMBING WORK:

   a) Connecting various basic pipe fittings like valves, taps, coupling, unions, reducers, elbows and other components which are commonly used in household.

   b) Connecting pipes of different materials: Metal, plastic and flexible pipes used in household appliances

   c) Preparing plumbing line sketches.

   d) Laying pipe connection to the suction and delivery side of a pump
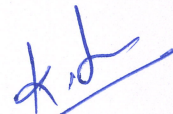
WOOD WORK:

   a) Sawing & Planning

   b) Making joints like T-Joint, Mortise joint and Tenon joint and Dovetail joint.

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WELDING WORK:

a) Welding of Butt Joints, Lap Joints, and Tee Joints using arc welding.

b) Practicing gas welding.

BASIC MACHINING WORK:

a) (Simple) Turning.

b) (Simple) Drilling.

c) (Simple) Tapping.

ASSEMBLY WORK:

a) Assembling a centrifugal pump.

b) Assembling a household mixer.

c) Assembling an Air-conditioner.

SHEET METAL WORK:

a) Making of a square tray

FOUNDRY WORK:

Demonstrating basic foundry operations.

GROUP-B (ELECTRICAL & ELECTRONICS ENGINEERING PRACTICES)		
PART – III	**ELECTRICAL ENGINEERING PRACTICES**	**15**

1. Introduction to Switches, Fuses, Indicators and Lamps - Basic switch board wiring with lamp, fan and three pin socket.

2. To construct a Staircase wiring.

3. Fluorescent Lamp wiring with introduction to CFL and LED types.

4. Measurement of Resistance to earth of an electrical equipment.

5. Study of Fan, Fan Regulator (Resistor type and Electronic type using Diac/Triac)

PART – IV	**ELECTRONICS ENGINEERING PRACTICES**	**15**

1. Resistor color coding and soldering practices.

2. Assembling and testing electronic components on a small PCB.

3. Study elements of Smart Phone and computer.

4. Study of Assembly and dismantle procedure of LED TV.

5. Mini project: to construct a circuit by using LED with Battery or Solar panel.
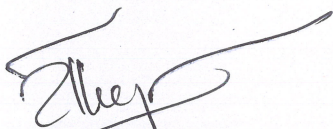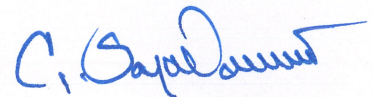
TOTAL: 60 PERIODS

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COURSE OUTCOMES
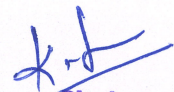
Upon completion of this course, the students will be able to:

CO1: Draw pipeline plan; lay and connect various pipe fittings use din common house holdplumbing work; Saw; plan; make joints in wood materials used in common household woodwork.

CO2: Weld various joint sin steel plate susing arc welding work; Machine various simple

Processes turning, drilling, tapping in parts; Assemble simple mechanical assembly of

Common house hold equipment's; Make a tray out of metal sheet using sheet metal

work.

CO3: Wire various electrical joint sin common house hold electrical wirework.

CO4: Solder and test simple electronic circuits; Assemble and test simple electronic

Components on PCB

VIDEO REFERENCES

1. https://www.youtube.com/watch?v=xJnIYNdz_3U
2. https://www.youtube.com/watch?v=9Z45E-V7S24
3. https://www.youtube.com/watch?v=VCX78nrgkiI
4. https://www.youtube.com/watch?v=1fsCTSrRXv8
5. https://www.youtube.com/watch?v=3GMju9wsGZM

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WEB REFERENCES

1. https://psr.edu.in/video-of-lab-experiments/

2. https://www.stannescet.ac.in/cms/staff/qbank/CSE/Lab_Manual/GE3271-
   ENGINEERING%20PRACTICES%20LABORATORY-988056784-
   EP%20LAB%20GE3271%20new.pdf

3. https://shanmugha.edu.in/pdf/course/mech/labmanual_1/EP%20Lab%20Manual.pdf
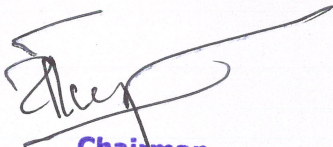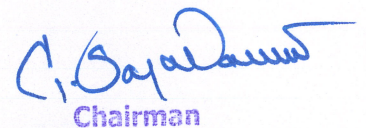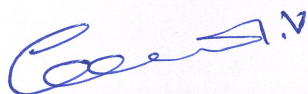
ONLINE COURCES

1. https://www.youtube.com/watch?v=njwdsMI3PcY
2. https://www.youtube.com/watch?v=NMBjv7VaLsg
3. https://www.youtube.com/watch?v=LxXdkceiGTY

COs	POs												PSO`s	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	-	-	1	1	1	-	-	-	-	2	2	1
CO2	3	2	-	-	1	1	1	-	-	-	-	2	2	1
CO3	3	2	-	-	1	1	1	-	-	-	-	2	2	1
CO4	3	2	-	-	1	1	1	-	-	-	-	2	2	1
CO5	3	2	-	-	1	1	1	-	-	-	-	2	2	1
AVG	3	2	-	-	1	1	1	-	-	-	-	2	2	1

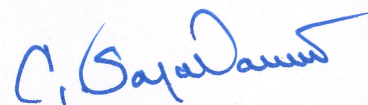**SMAPPING OF COs With POs AND PSOs**

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24EN210	COMMUNICATION SKILLS - II			Version : 1.0		
	DEPARTMENT OF SCIENCE AND HUMANITIES					
Programme & Branch	Common to all B.E / B.Tech Degree	L	T	P	C	
		0	0	2	1	

COURSE OBJECTIVES

- To identify varied group discussion skills and apply them to take part in effective discussions ina professional context.

- To analyses concepts and problems and make effective presentations explaining them clearlyand precisely.

- To be able to communicate effectively through formal and informal writing. To be able to use appropriate language structures to write emails, reports and essaysTo give instructions and recommendations that are clear and relevant to the context

UNIT - I		9

Speaking-Role Play Exercises Based on Workplace Contexts, - talking about competition-discussing progress toward goals-talking about experiences- discussing past events.

Writing: Writing emails (formal & semi-formal).

UNIT - II		9

Speaking: Discussing news stories -talking about travel problems- discussing travel procedures and problems - talking about travel problems- making arrangements-describing arrangements- discussing plans and decisions- discussing purposes and reasons - understanding commontechnology terms.

Writing: - Paragraph Writing

UNIT - III		9

Speaking: Discussing predictions-describing the climate-discussing forecasts and scenarios-talkingabout purchasing-discussing advantages and disadvantages- making comparisons- discussing likes and dislikes- discussing feelings about experiences-discussing imaginary scenarios

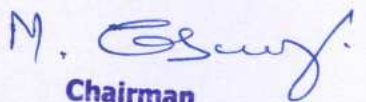**Writing**: Short essays and reports-formal/semi-formal letters.

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UNIT – IV		9

Speaking: Discussing the natural environment-describing systems-describing position and movement- explaining rules-(example- discussing rental arrangements)- understanding technical instructions

Writing: Writing instructions-writing a short article.

UNIT - V		9

Speaking: Describing things relatively-describing clothing-discussing safety issues (making recommendations) talking about electrical devices-describing controlling actions

Writing: Job application (Cover letter + Curriculum vitae)-writing recommendations.

TOTAL: 30 PERIODS

LEARNING OUTCOMES

At the end of the course, learners will be able to
- Speak effectively in group discussions held in a formal / semiformal context.
- Discuss, analyse and present concepts and problems from various perspectives toarrive at suitable solutions
- Write emails, letters and effective job applications.
- Write critical reports to convey data and information with clarity and precision
- Give appropriate instructions and recommendations for safe execution of tasks

NOTE

1. Internal mode only

E- RESOURCES

1. https://www.youtube.com/watch?v=DPaU8kYS3mI&list=PLMfo9NXs6ZfGa3qqm6GS98sMsBqkQy5-a

M. Eswari

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MAPPING OF COs With POs AND PSOs

COs	POs												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	3	3	3	-	-	-	-	-
CO2	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-
CO3	-	-	-	-	-	-	-	-	3	3	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	2	3	-	3	-	-	-
CO5	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-
AVG	-	-	-	2	-	2	-	3	2.6	3	-	3	-	-	-

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