D. Y. Patil Education Society's

D. Y. Patil Technical Campus
Faculty of Engineering & Faculty of Management
Talsande

(An Autonomous Institute)

Approved by AICTE and Affiliated to Shivaji University, Kolhapur

(Accredited by NAAC 'A' Grade with 3.25 CGPA in First Cycle)

Curriculum Structure

With Effective from Academic Year 2024-25

LIST OF ABBREVIATIONS

Sr. No	Abbreviations	Courses
1	BSC	Basic Science Course
2	ESC	Engineering Science Course
3	PCC	Programme Core Course
4	PEC	Programme Elective Course
5	MDM	Multidisciplinary Minor
6	OE	Open Elective
7	VSEC	Vocational and Skill Enhancement Course
8	AEC	Ability Enhancement Course
9	HSSM	Humanities Social Science and Management
10	IKS	Indian Knowledge System
11	VEC	Value Education Course
12	FP	Field Project
13	ELC	Experiential Learning Courses
14	CC	Co-curricular Courses
15	MC	Mandatory Course
16	ISE	In Semester Evaluation
17	MSE	Mid Semester Examination
18	CA	Continuous Assessment
19	POE	Practical Oral Examination
20	ESE	END Semester Examination

CURRICULUM FRAMEWORK

The Course and Credit Distribution

Sr. No	Type of Course	No. of Courses		Total No. Credit	
		Sem I	Sem II	Sem I	Sem II
1	Basic Science Course (BSC)	2	2	8	8
2	Engineering Science Course (ESC)	2	1	8	5
3	Programme Core Course (PCC)		1		2
4	Programme Elective Course (PEC)				
5	Multidisciplinary Minor (MDM)				
6	Open Elective (OE)				
7	Vocational and Skill Enhancement Course (VSEC)	1	1	2	2
8	Ability Enhancement Course (AEC)		1		1
9	Humanities Social Science and Management (HSSM)				
10	Indian Knowledge System (IKS)	1		2	
11	Value Education Course (VEC)				
12	Field Project (FP)				
13	Experiential Learning Courses (ELC)				
14	Co-curricular Courses (CC)	1	1	2	2
15	Mandatory Course (MC)				
Total		7	7	22	20

Semester wise Course Distribution										Total
Sr. No	Course Category	Number of Courses per Semester								
		1	2	3	4	5	6	7	8	
1	Basic Science Course (BSC)	2	2							4
2	Engineering Science Course (ESC)	2	1							3
3	Programme Core Course (PCC)		1	3	3	3	3	2	2	17
4	Programme Elective Course (PEC)					1	2	2	1	6
5	Multidisciplinary Minor (MDM)			1	1	1	1	1	1	6
6	Open Elective (OE)			1	1	1				3
7	Vocational and Skill Enhancement Course (VSEC)	1	1		1		1			4
8	Ability Enhancement Course (AEC)		1		1					2
9	Entrepreneurship Management Courses			1	1					2
10	Indian Knowledge System (IKS)	1								1
11	Value Education Course (VEC)			1	1					2
12	Research Methodology							1		1
13	Field Project (FP)			1						1
14	Project							1		1
15	Internship								1	1
16	Co-curricular Courses (CC)	1	1							2
Total		7	7	8	9	6	7	7	5	56

CREDIT DISTRIBUTION : SEMESTER WISE										Total	Total Credits GR
1 Lecture hour = 1 Credit 2 Lab Hours = 1 Credit 1 Tutorial Hour = 1 Credit											
Sr. No	Type of Course	No of Credits/ Semester									
		1	2	3	4	5	6	7	8		
1	Basic Science Course (BSC)	8	8							16	14-18
2	Engineering Science Course (ESC)	8	5							13	16-12
3	Programme Core Course (PCC)		2	10	10	12	10	6	4	54	44-56
4	Programme Elective Course (PEC)					4	8	2	6	20	20
5	Multidisciplinary Minor (MDM)			2	2	4	2	2	2	14	14
6	Open Elective (OE)			4	2	2				8	8
7	Vocational and Skill Enhancement Course (VSEC)	2	2		2		2			7	8
8	Ability Enhancement Course (AEC)		1							4	4
9	Humanities Social Science and Management (HSSM)			2	2					4	4
10	Indian Knowledge System (IKS)	2								2	2
11	Value Education Course (VEC)			2	2					4	4
12	Research Methodology								4	4	4
13	Field Project			2						2	2
14	Project								4	4	4
15	Internship							12		12	12
16	Co-curricular Courses (CC)	2	2							4	4
Total		22	20	22	22	22	22	22	20	172	160-176

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Department of Electrical Engineering

Curriculum Structure

First Year Electrical Engineering Program (Course 2024-25)

With Effective from Academic Year 2024-25

Curriculum Structure

First Year Electrical Engineering

D. Y. PATIL TECHNICAL CAMPUS

FACULTY OF ENGINEERING & FACULTY OF MANAGEMENT, TALSANDE

(An Autonomous Institute)

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SCHEME OF INSTRUCTION & CURRICULUM

Programme: - Electrical Engineering

Semester - I

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Course Credits	EXAM SCHEME				
								ISE	MSE	ESE	INT	TOTAL
1	BSC	AM24FE111	Applied Mathematics-I	3	1	-	4	20	30	50	25	125
2		CHEM24FE112	Applied Chemistry	3	-	-	3	20	30	50	-	100
		CHEM24FE112P	Applied Chemistry Laboratory	-	-	2	1	-	-	-	25	25
3	ESC	PSCL24FE113	Problem Solving with C-Language	3	-	-	3	20	30	50	-	100
		PSCL24FE113P	Problem Solving with C-Language Laboratory	-	-	2	1	-	-	-	25	25
4		EGCAD24FE114	Engineering Graphics & Computer Aided Drawing	3	-	-	3	20	30	50	-	100
		EGCAD24FE114P	Engineering Graphics & Computer Aided Drawing Laboratory	-	-	2	1	-	-	-	25	25
5	VSEC	DTTI24FE115	Design Thinking Through Innovation	1	-		1	25		-	-	25
		DTTI24FE115P	Design Thinking Through Innovation Laboratory	-	-	2	1	-	-	-	25	25
6	AEC	PC24FE116	Professional Communication	1	-	-	1	25	-	-	-	25
		PC24FE116P	Professional Communication Laboratory	-	-	2	1	-	-	-	25	25
7	CCA	NSS24FE117	NSS	1	-	2	2	-	-	-	50	50
Total				**15**	**1**	**12**	**22**	**130**	**120**	**200**	**200**	**650**
Non Credit Mandatory Course												
8	MC	MC24FE118	Finishing School Training I	3	-	-	NC	-	-	-	Grade	Grade
9		MC24FE119	Rural/ Social Internship	-	-	-	NC	-	-	-	Grade	Grade

Note: This structure is approved by Academic Council in the meeting dated 03.09.2024

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SCHEME OF INSTRUCTION & CURRICULUM

Programme: - Electrical Engineering

Semester - II

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Course Credits	EXAM SCHEME				
								ISE	MSE	ESE	INT	TOTAL
1	BSC	AM24FE121	Applied Mathematics-II	3	1	-	4	20	30	50	25	125
2		PHY24FE122	Applied Physics	3	-	-	3	20	30	50	-	100
		PHY24FE122P	Applied Physics Laboratory	-	-	2	1	-	-	-	25	25
3	ESC	GENAI24FE123	Generative AI	3	-	-	3	20	30	50	-	100
		GENAI 24FE123P	Generative AI Laboratory	-	-	2	1	-	-	-	25	25
4	PCC	FEE24FE124	Fundamentals of Electrical Engineering	2	-	-	2	-	-	50	-	50
5	VSEC	PES24FE125	Plumbing and Electrical Skills	1	-	2	2	25	-	-	25	50
6	IKS	ITPA24FE126	Indian Town Planning and Architecture	2	-	-	2	20	-	30	-	50
7	CCA	YOGA24FE127	Yoga	1	-	2	2	-	-	-	50	50
Total				**15**	**1**	**8**	**20**	**105**	**90**	**230**	**150**	**575**
Non Credit Mandatory Course												
8	MC	MC24FE128	Finishing School Training II	3	-	-	NC	-	-	-	Grade	Grade
9		MC24FE129	Capstone Project	-	-	-	NC	-	-	-	Grade	Grade

Note: This structure is approved by Academic Council in the meeting dated 03.09.2024

Course Title : Applied Mathematics I	
Course Code: AM24FE111	**Semester: I**
Teaching Scheme: L-T-P : 3 – 1 – 0	**Credits : 4**
Evaluation Scheme: ISE-I (10 Marks), MSE (30 Marks), ISE-II (10 Marks)	**ESE Marks: 50 marks**

Prior Knowledge of:	Matrices, Derivatives.

Course Objectives:

1.	To teach mathematical methodology.
2.	To develop mathematical skills and enhance logical thinking power of students.
3.	To provide students with skills in Linear Algebra and Statistics and differential calculus.
4.	To imbibe graduates with mathematical knowledge, computational skills and the ability to deploy the skills effectively in solution of engineering problems.

CurriculumDetails

Course Contents	Duration
Unit-I : LinearAlgebra–I • Introductiontomatrices,typesof matrices. • Rankofmatrixbynormalformandechelon form. • Solutionofsimultaneouslinearnon-homogenous equations. • Solutionofsimultaneouslinearhomogenous equations.	**07 Hrs**
Unit-II : LinearAlgebra–II • Definitionoflinearcombinationof vectors. • Dependenceandindependenceof vectors. • Eigenvaluesandits properties. • Eigenvectorsandits properties. • Cayley – Hamilton theorem (Without proof)	**07 Hrs**
Unit-III :NumericalSolutionsofLinear Equations • Introduction • Gauss–Elimination method • Gauss–Jordan method • Gauss–Seidel method • Jacobi'siterative method	**07 Hrs**
Unit-IV : Probability Distribution	**08 Hrs**

Course Contents	Duration
• Random variables. • Discrete Probability distribution. • Continuous probability distribution. • Binomial Distribution. • Poisson Distribution. • Normal Distribution.	
Unit-V : Correlation and Regression and Fitting of Curves • Introduction, Types of correlation, Karl Pearson's coefficient of correlation. • Interpretation of the coefficients of correlation. • Computation of coefficient of correlation for ungroup data. • Lines of regression. • Calculations of equations of the lines of regression. • Fit a first degree curve. • Fit a second degree curve. • Fit an exponential curve $y = a.x^b$, $y = a.b^x$	**08 Hrs**
Unit-VI : Partial Differentiation • Introduction. • Partial derivatives. • Total derivatives. • Euler'stheoremonhomogeneousfunctions. • Jacobiananditsproperties. • Maxima and Minima.	**08 Hrs**

Course Outcomes (COs): After successful completion of the course, students will be able to:

CO	Statements
1	**understand** matrices and **apply** such knowledge to solve linear system of equation and find eigen values and eigen vectors.
2	**use** numerical methods to solve system of linear equation
3	**describe** the statistical data numerically by using Lines of regression and Curve fittings, **solve** the problems on probability distribution
4	**solve** the problems on partial differentiation and **apply** such knowledge to find maxima and minima

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

POs / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
1	2 ,3	3	3	3	-	-	-	-	-	-	-	-	-
2	3	2	2	2	-	-	-	-	-	-	-	-	-
3	3	3	3	3	-	-	-	-	-	-	-	-	-
4	3	2	2	2	-	-	-	-	-	-	-	-	-

Suggested Learning Resources:

Text Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	Advanced Engineering Mathematics	7th	PeterV.O'Neil	Cengage Learning	2012
2	Advanced Engineering Mathematics	1st	H.K.Dass	S. Chand Publications, New Delhi	2011
3	A Text Book of Applied Mathematics	7th	P.N.Wartikar, J.N.Wartikar	VidyarthiGrihaPrakashan,Pune.	2006
4	Higher Engineering Mathematics	36th	B.S.Grewal	Khanna Publishers	2001

Reference Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	Advanced Engineering Mathematics	5th	ErwinKreyszig	IndiaPvt.,Ltd.	2014
2	Higher Engineering Mathematics	6th	B.V.Ramana	TataM/cGraw – HillPublication	2010
3	Numerical Methods for Scientific and Engineering Computation	5th	M.K.Jain	New Age International Pvt.LtdNew Delhi	2007
4	A Textbook of Engineering Mathematics	6th	N.P.Bali,Iyengar	Laxmi Publication	2004

Useful Link /Web Resources:

1. DELNET- http://www.delnet.in
2. NDL-http://ndl.iitkgp.ac.in
3. N-LIST- http://www.nlist.inflib.ac.in

List of Tutorials:

Tut. No	Title of Tutorials	Duration
01	LinearAlgebra–I	01 Hr
02	LinearAlgebra–I	01 Hr
03	LinearAlgebra–II	01 Hr
04	LinearAlgebra–II	01 Hr
05	NumericalSolutions of Linear Equations	01 Hr
06	Numerical Solutions of Linear Equations	01 Hr
07	Probability Distribution	01 Hr
08	Probability Distribution	01 Hr
09	Correlation and Regression and Fitting of Curves	01 Hr
10	Correlation and Regression and Fitting of Curves	01 Hr
11	Partial Differentiation	01 Hr
12	Partial Differentiation	01 Hr

D. Y. PATIL TECHNICAL CAMPUS
Faculty of Engineering & Faculty of Management, Talsande
(An Autonomous Institute)
Department of First Year Engineering
F. Y. B. Tech. Curriculum
(Programme – Electrical Engineering) w.e.f. A.Y. 2024-2025

Course Title: Applied Chemistry	
Course Code: CHEM24FE112	**Semester: I**
Teaching Scheme: L-T-P: 3-0-0	**Credits: 3**
Evaluation Scheme: ISE-I (10 marks), MSE (30 marks), ISE-II (10 marks)	**ESE Marks: 50 marks**

Prior Knowledge of:	Physical and chemical properties of water, basics knowledge ceramic, properties of elements and metallic material, electrochemistry, green chemistry

Course Objectives:

1.	To analyze water quality parameters and metallic materials.
2.	To explain the corrosion mechanism, methods and to prevent corrosion.
3	To create interest among the students regarding various engineering materials.
4.	To think about green chemistry and pollution
5.	To understand the basic concepts of battery techniques.

Curriculum Details

Course Contents	Duration
UNIT 1: Water Treatment • Introduction, • Impurities in natural water, • Water quality parameters like pH, acidity, alkalinity, chlorides, total solids and hardness of water (causes, types, and units of hardness). • Ill effects of hard water in steam generation in boilers, • Numerical problems on hardness, • Treatment of hard water by Ion exchange process and Reverse osmosis process (R.O.).	**07 Hrs**
UNIT II: Corrosion and its Control • Introduction, • types of corrosion - atmospheric corrosion (oxidation corrosion), electrochemical corrosion - hydrogen evolution and oxygen absorption mechanism, • factors affecting the rate of corrosion, • Prevention of corrosion by proper selection of material and proper designing, cathodic protection – sacrificial anodic method and external current method, hot dipping- galvanizing and tinning, electroplating, metal spraying and metal cladding.	**07 Hrs**
UNIT III: Metallic and Ceramic Materials **Metallic materials**:	**07 Hrs**

• Introduction, • Alloys - definition and classification, purposes of making an alloy. • Ferrous alloys: Plain carbon steel (mild, medium and high), stainless steel. • Non-ferrous alloys: Copper alloys – Brass & Bronze, Nickel alloy - Nichrome, Aluminum alloys - Duralumin and Alnico, Tin alloy - Solder metal. **Ceramics Materials:** • Definition, • Classification. • Properties of Ceramics, • Manufacturing process and chemical composition of Portland cement, • Mechanism of setting and hardening.	
UNIT IV: Polymers and Cement Chemistry **Polymers:** • Plastics, thermos-softening and thermosetting plastics • Industrially important plastics like phenol formaldehyde, urea formaldehyde, Conducting polymers and Biopolymers (Introduction, examples and applications.) **Cement Chemistry:** • Cement manufacturing, dry process, wet process, semi dry process, • Hydration reactions	**07 Hrs**
UNIT V: Green Chemistry and Pollution • Introductions of green chemistry, • 12 principles of green chemistry, • Synthesis of chemicals by green chemistry routes, • 3Rs - Reduce, Reuse and Recycle, • disposal of plastics, • Biodegradable polymers- need, constituents, required, factors, properties, applications, • Microwave and ultrasound assisted reactions, examples of green synthesis. • Air pollution, soil pollution, water pollution (causes and preventive measures)	**07 Hrs**
UNIT VI:Energy System and Battery Technology • Introduction, Classification of batteries (primary and secondary batteries). • Construction, working, advantages and applications of carbon-zinc cell, Ni-Cd and Li- ion battery as an electrochemical cell. • Principle, Properties and applications of Quantum dots sensitized solar cells (QDSSC's). • Fuel cells: Concept, types of fuel cells and merits. Construction, working and applications, phosphoric acid fuel cell and Hydrogen- oxygen fuel cell	**07 Hrs**

Remarks

Course Outcomes (COs): After successful completion of the course, students will be able to:

CO	Statements
112.1	**Remember** the water quality parameters and water treatment methods to solve the domestic and industrial problems.
112.2	**Select** proper engineering materials for industries and apply the knowledge of corrosion for prevention of corrosion.
112.3	**Apply** the knowledge of metallic and ceramic materials on selection of engineering materials.
112.4	**Use** the knowledge of polymer, nanomaterials,green chemistry and its characterization techniques in engineering field

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

POs / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
112.1	1	3	2	1	-	-	-	-	-	-	-	-	1
112.2	2	3	2	-	-	-	-	-	-	-	-	-	1
112.3	3	3	2	-	-	-	-	-	-	-	-	-	1
112.4	3	3	2	-	-	-	-	-	-	-	-	-	1

Text Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	Engineering Chemistry" (15th Ed.) by P. C. Jain & Monica Jain, Dhanpat Rai & Co.	15th	by P. C. Jain & Monica Jain, Dhanpat Rai & Co.	Dhanpat Rai Publishing Company	2015
2	"A Textbook of Engineering Chemistry" by Dr. S. S. Dara &Dr. S. S. Umare S. Chand & Company Ltd.	New	Dr. S. S. Dara &Dr. S. S. Umare S. Chand & Company Ltd.	S Chand	2004
3	"A Text Book of Engineering Chemistry" by Shashi Chawla Dhanpat Rai & Co.	6th	Shashi Chawla Dhanpat Rai & Co.	Dhanpat Rai & Co. (P) Limited	2017

Reference Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	Engineering Chemistry" (15th Ed.) by P. C. Jain & Monica Jain, Dhanpat Rai & Co.	15th Ed	P. C. Jain & Monica Jain, Dhanpat Rai & Co.	Dhanpat Rai Publishing Company	2015
2	"Engineering Chemistry "by M. M. Uppal, Khanna Publishers.	8th	M. M. Uppal	Khanna Publishers.	1992
3	Engineering Chemistry" by O.G.Palanna, Tata McGraw Hill Education Pvt. Ltd.	2nd	O.G.Palanna, Tata	McGraw Hill Education	2017

Useful Link /Web Resources:

1. https://www.vlab.co.in/broad-area-chemical-science

Course Title: Applied Chemistry Laboratory	
Course Code: CHEM24FE112P	**Semester: I**
Teaching Scheme: L-T-P: 0-0-2	**Credit: 01**
Evaluation Scheme: INT (25 marks)	**ESE Marks: 00**

Prior Knowledge of:	Experiments based on titration, Handling of glassware's and chemicals

Course Objectives:

1.	To test water quality parameters using various titration analysis methods
2.	To estimate the corrosion rate and study the mechanism of corrosion to prevent corrosions
3.	To describe the importance of polymeric materials
4.	To synthesize simple advanced materials and estimate concentration of elements in materials.
5.	To use pH meter and colorimeter

List of Experiments- Minimum 8 practical's need to perform from the following list

Exp. No	Title of Experiments	Duration
01	Determination of total hardness of water sample by EDTA method (Complexometric Titration).	02 Hrs
02	Determination of acidity of given water sample.	02 Hrs
03	Determination of alkalinity of given water sample.	02 Hrs
04	Determination of chloride content of water sample by Mohr's method.	02 Hrs
05	Determination of pH of various samples by using digital pH meter.	02 Hrs
06	Determination of rate of corrosion of aluminum in acidic and basic medium.	02 Hrs
07	Determination of percentage of copper in brass.	02 Hrs
08	To study the construction and working of Galvanic cell	02 Hrs
09	Preparation of urea formaldehyde resin.	02 Hrs
10	Preparation of phenol formaldehyde resin.	02 Hrs
11	Estimation of iron from a solution by colorimetry.	02 Hrs
12	Estimation of copper from a solution by colorimetry	02 Hrs

Course Outcomes (COs): After successful completion of the course, students will be able to:

CO	Statements
112.1	**Interpret** the calculation of various water quality parameters using titration methods
112.2	**Apply** the corrosion knowledge to know the process of corrosion
112.3	**Remember** the synthesis method of the advanced materials like urea and phenol formaldehyde resin
112.4	**Explaining** the use of pH meter, colorimeter for the analysis

Course Articulation Matrix: Mapping of Course Outcomes (Cos) with Program Outcomes (PO's)

PO's / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
112.1	2	3	2	-	-	-	-	-	-	-	-	-	1
112.2	3	3	-	-	-	-	-	-	-	-	-	-	1
112.3	1	3	-	-	-	-	-	-	-	-	-	-	1
112.4	2	3	-	-	-	-	-	-	-	-	-	-	1

Suggested Learning Resources: --
Text Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	Laboratory manual on engineering chemistry	1st	S. K. Bashin, Dr.Sudha Rani	Dhanpat Rai Publishing CompanyLtd.,New Delhi	2012
2	Engineering Chemistry	15th	P. C. Jain,	Dhanpat Rai Publishing Company Ltd., New Delhi	2014

Reference Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	Laboratory manual on engineering chemistry	1 st	S. K. Bashin, Dr. Sudha Rani	Dhanpat Rai Publishing Company Ltd., New Delhi	2012
2	Engineering Chemistry	15th	P. C. Jain,	Dhanpat Rai Publishing Company Ltd., New Delhi	2014

Useful Link /Web Resources:

1. https://www.vlab.co.in/broad-area-chemical-science

Course Title :- Problem Solving with C-Language	
Course Code:- PSCL24FE113	**Semester:- Semester–I**
Teaching Scheme L-T-P : 03-00-00	**Credits : 3**
Evaluation Scheme: ISE-I (10Marks), ISE-II (10Marks), MSE (30Marks)	**ESE Marks: 50 marks**

Prior Knowledge of:	**Basic Knowledge of Computers**

Course Objectives:

1.	Understand working principles of programming languages
2.	Demonstrate use of decision and repetition structure in order to solve specific problem
3.	Use of modular approach for problem solving
4.	Understand the basics of pointers

Curriculum Details:

Course Contents	Duration
Unit-I Introduction to C • Evolution of "C" • Feature of "C" • Structure of C Program • Compilation and Execution • Data Types – user defined • pre-defined, Variables, Constants • reading and printing variable values • Preprocessor Directive	**08 Hrs**
Unit-II Operators in C • Arithmetic Operators • Relational Operators • Logical Operators • Unary Operators • Bitwise Operators • Ternary Operator • sizeof operator	**07 Hrs**
Unit-III Control Flow Statements & Blocks • Decision Controls • If-else statements • Switch Case • Loops – for loop • while loop • do – while loop • Loop interruption – break, continue, exit functions	**08 Hrs**
Unit-IV Functions	**08 Hrs**

Course Contents	Duration
• Fundamentals of function – function declaration and prototype • Function definition • Function call • Return type and return statement • Function arguments • Scope of Variables in function • Variable storage classes • Storage classes – Automatic, Static, Register, External	
Unit-V Arrays • Single Dimensional Array • Multi-Dimensional Array • Character Array • Strings • Built in String functions -strcat, strcmp, strcpy, strlen, strrev	**06 Hrs**
Unit-VI Pointers • Address & Dereferencing • Pointer Type Declaration • Pointer Initialization • Pointer Assignment • Pointer Arithmetic • Pointer Comparison • Pointer & Functions – Passing Pointer to function, pass by value, pass by reference • Pointer to array	**08 Hrs**

Course Outcomes (COs): After successful completion of the course, students will be able to:

CO	Statements
1	Explain features of "C" programming language.
2	Select appropriate operators in programming expressions for implementing simple C-Programs.
3	Explain Decision Making, Branching statements and looping statements for implementing Programs.
4	Model a given big problem statement in to smaller parts to provide modular approach.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

POs / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
1	1	3	3	3	-	-	-	-	-	-	-	-	-
2	2	3	3	3	2	2	-	-	-	-	-	-	-
3	2	3	3	3	2	2	-	-	-	-	-	-	-
4	2	3	3	3	2	2	-	-	-	-	-	-	-

Strongly Contribution: 3 Moderate Contribution: 2 Weak Contribution: 1 No Contribution--

Suggested Learning Resources:

Text Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	The Complete Reference	4th	Herbert Schildt	McGraw-Hill Education	2017
2	"C" Programming Language	2nd	Brian Kernighan, Dennis Ritchie	PHI Learning	2011

Reference Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	Practical "C" Programming	3rd	Steve Oualline	Oreilly	2013
2	Programming in ANSI C	8th	E. Balagurusamy	McGraw Hill Education	2019

Useful Link /Web Resources:

1. DELNET- http://www.delnet.in
2. NDL-http://ndl.iitkgp.ac.in
3. N-LIST- http://www.nlist.inflib.ac.in

Course Title : -- Problem Solving with C-Language Laboratory	
Course Code: - PSCL24FE113P	**Semester: - I**
Teaching Scheme L-T-P : - 00-00-02	**Credits : 1**
Evaluation Scheme: INT: 50 Marks	**ESE/POE/OE Marks: -**

Prior Knowledge of:	**Basic Knowledge of Computers**

Course Objectives:

1.	Apply concepts of variable, constants, input and output streams for developing interactive programs.
2.	Develop a solution using loops and conditional statements
3.	Design solution using arrays.
4.	Develop an optimized solution for large problem using concept of function and pointer.

List of Experiments-

Exp. No	Title of Experiments	Duration
01	To study variables and constants in "C" Practical/Experimentation: • Declare and initialize variables and constant using assignment statement and scanf function • Use printf function to display the variables – (data type formatting)	02 Hrs
02	To Study arithmetic operators in "C" • Develop program to use arithmetic operators	02 Hrs
03	To Study logical operators and Conditional Execution • Develop program to test conditional execution of the code –If else, else if, nested if else, else if ladder, switch	02 Hrs
04	To Study Iterative Execution • Develop program to test iterative execution of the code – while, do-while and for	02 Hrs
05	To Study functions in "C" • Develop function which accepts argument, process the argument and return the result – eg. Addition function accepts two numbers, performs addition and returns the result	02 Hrs
06	To Study Arrays in "C" • Develop a function which accepts a integer array and print the array • Develop a function which accepts a integer array, perform arithmetic operation on array	02 Hrs
07	To Study String and String Functions in "C" • Develop a program which accepts a character array, string as input and display it • Develop a program demonstrating various string functions [e.g. strlen(),strcpy(),strcat(),strcmp()]	02 Hrs
08	To Study Multi-Dimensional Array • Implement Matrix Addition using 2D array. • Implement Matrix Multiplication using 2D array.	02 Hrs
09	To Study Pointers in "C"	02 Hrs

Exp. No	Title of Experiments	Duration
	• Develop a function to accept array argument using pointer, modify and display contents of the array using pointer	
10	To Study Pointers in "C" • Pass integer variables using – pass by value and pass by reference concept • Modify the values and test the effect on the variables by printing values in the function and main method	02 Hrs

Course Outcomes (COs): After successful completion of the course, students will be able to:

CO	Statements
1	Use of variable, constants, input and output streams for developing interactive programs.
2	Writing control flow statement using C Programming.
3	Develop C program using array and function.
4	Develop C program solution for given problem using pointers.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

POs / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
1	1	3	3	3	-	-	-	-	-	-	-	-	-
2	2	3	3	3	2	2	-	-	-	-	-	-	-
3	2	3	3	3	2	2	-	-	-	-	-	-	-
4	2	3	3	3	2	2	-	-	-	-	-	-	-

Strongly Contribution: 3 Moderate Contribution: 2 Weak Contribution:1 No Contribution--

Suggested Learning Resources:

Text Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	The Complete Reference	4th	Herbert Schildt	McGraw-Hill Education	2017
2	"C" Programming Language	2nd	Brian Kernighan, Dennis Ritchie	PHI Learning	2011

Reference Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	Practical "C" Programming	3rd	Steve Oualline	Oreilly	2013
2	Programming in ANSI C	8th	E. Balagurusamy	McGraw Hill Education	2019

Useful Link /Web Resources:

1. DELNET- http://www.delnet.in
2. NDL-http://ndl.iitkgp.ac.in
3. N-LIST- http://www.nlist.inflib.ac.in

Course Title :Engineering Graphics and Computer Aided Engineering Drawing	
Course Code: EGCAD24FE114	**Semester:-I**
Teaching Scheme: L-T-P :3-0-0	**Credits : 3**
Evaluation Scheme: ISE-I (10 Marks), MSE (30 Marks), ISE-II (10 Marks)	**ESE Marks: 50 marks**

Prior Knowledge of:	General Awareness, Knowledge of Geometry at SSC Level

Course Objectives:

1.	To learn Manual as well as computer based Engineering Drawing.
2.	To project line, plane and solids by using 1st angle method of projections.
3.	To understand and project orthographic and isometric Projections
4	To understand and develop lateral surfaces of cut sections of different standard solids

CurriculumDetails

Course Contents	**Duration**
Unit-1 Introduction to Computer Aided Drawing • Introduction to CAD & Graphical user interface of the CAD software. • Drawing instruments, • Geometrical constructions, • Lettering, • Title block, • Sheet sizes, • Line types, • Dimensioning.	**7Hrs**
Unit-2 Methods of projection- • Projection concept, • Orthographic Projection, • Projection of points in all quadrants, • First angle Vs. third angle method of projection. **Projection of Lines-** • Projection of oblique lines its True length and angle with reference planes by rotation method. • Concept of grade and bearing of line(Line inclined to both plane Rotation Method Only)	**8 Hrs**
Unit-3 Projections of Planes & Solids	**7 Hrs**

Course Contents	Duration
• Projection of planes (only regular polygons like Triangular, Square, Rectangular, Pentagonal, Hexagonal and circle) inclined to HP. • Projection of regular Solids such as Prisms, pyramids, cylinder and cone with their axis inclined to HP	
Unit 4- Orthographic Projections • Selection of views, • Spacing of views, • Dimensioning and sections. • Drawing required views (any two views) from given pictorial views (Conversion of pictorial view into orthographic view) including sectional orthographic view.	**8 Hrs**
Unit 5- Isometric projections • Concept of isometric projection, • Isometric scale and isometric drawing. • Conversion of orthographic views of simple 3D objects into single isometric drawing. • Introduction of 3D Modelling workspace of AutoCAD. • 3D Modelling of Simple Object using AutoCAD.	**8 Hrs**
Unit 6-Development of Lateral Surfaces • Development of plane and curved lateral surfaces of regular Prisms, Pyramids, Cylinders and Cones (cutting planes specified via figure).	**7 Hrs**

Course Outcomes (COs): After successful completion of the course, students will be able to:

COs	Statement
1	Understand basic commands of CAD and use of AutoCAD 3D Modelling Workspace for practicing lines, solids, lettering and dimensioning in Engineering Drawing
2	Visualize and project Orthographic and Isometric drawings of simple machine components
3	Demonstrate and projections of points, lines , planes and Solids by appropriate method
4	Develop lateral surfaces of solid cut sections and their projections

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

POs / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
1	2	-	-	-	-	-	-	-	-	-	-	-	1
2	3	1	-	1	2	2	-	-	-	-	1	-	-
3	3	-	-	1	2	2	-	-	-	-	1	-	-
4	3	-	-	1		1	-	-	-	-	-	-	-

Suggested Learning Resources:

Text Books:

Sr. No	Title	Author(s)	Publisher
1	Engineering Graphics with Auto CAD	D. M. Kulkarni , A. P. Rastogi	(PHI) Publisher
2	Engineering Graphics	P.G.Deshpande	Mahaluxmi
3	Machine Drawing	N. D. Bhatt	Charotor Publication House
4	Computer Aided Engineering Drawing	S. Trymbaka Murthy	-I.K. International Publishing House Pvt. Ltd., New Delhi.

Reference Books:

Sr. No	Title	Author(s)	Publisher
1	“Engineering Drawing and Graphics”	K. Venugopal	New Age Publication
2	“Engineering Drawing”	N. B. Shaha and B.C. Rana	Pearson Education
3	Machine Drawing”	K. L. Narayana	, New Age Publication
4	Working with AutoCAD 2000”	Ajeet Sing	Tata McGraw Hill

Online Resources: Unit No Online Resource Link Source

https://archive.nptel.ac.in/courses/112/105/112105294/ NPTEL
https://archive.nptel.ac.in/courses/112/104/112104172/ NPTEL
https://archive.nptel.ac.in/courses/112/102/112102304/ NPTEL
https://nptel.ac.in/courses/112103019 NPTEL

Course Title :Engineering Graphics and Computer Aided Engineering Drawing Laboratory	
Course Code: EGCAD24FE114	**Semester:-I**
Teaching Scheme: L-T-P : 0-0-2	**Credits : 1**
Evaluation Scheme: ISE- 25	**ESE Marks: --**

Prior Knowledge of:	General Awareness, Knowledge of Geometry at SSC Level

Course Objectives:

1.	To learn Manual as well as computer based Engineering Drawing.
2.	To project line, plane and solids by using 1st angle method of projections.
3.	To understand and project orthographic and isometric Projections
4	To understand and develop lateral surfaces of cut sections of different standard solids

List of Practical's

Practical No	**Title of Tutorials**	**Duration**
01	Submission Sheet on Geometrical Constructions & Projections of Line Introduction of AutoCAD GUI & Basic Commands: at least 4 Figures are to be drawn in sketch book and redraw using AutoCAD and Line Problems for submission sheets	6 Hrs
02	Sheet on Projections of Planes	4 Hrs
03	Sheet on Projections of Solids	4 Hrs
04	Sheet on Orthographic Projections	4 Hrs
05	Isometric Projections & 3D Modelling	4 Hrs
06	Sheet on Development of Lateral Surfaces	4 Hrs
07	Practice & Internal Oral	4 Hrs

Course Outcomes (COs): After successful completion of the course, students will be able to:

COs	Statement
1	Understand basic commands of CAD and use of AutoCAD 3D Modelling Workspace for practicing lines, solids, lettering and dimensioning in Engineering Drawing
2	Visualize and project Orthographic and Isometric drawings of simple machine components
3	Demonstrate and projections of points, lines , planes and Solids by appropriate method
4	Develop lateral surfaces of solid cut sections and their projections

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

POs / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
1	2	-	-	-	-	-	-	-	-	-	-	-	1
2	3	1	-	1	2	2	-	-	-	-	1	-	-
3	3	-	-	1	2	2	-	-	-	-	1	-	-
4	3	-	-	1		1	-	-	-	-	-	-	-

Suggested Learning Resources:

Text Books:

Sr. No	Title	Author(s)	Publisher
1	Engineering Graphics with Auto CAD	D. M. Kulkarni , A. P. Rastogi	(PHI) Publisher
2	Engineering Graphics	P. G. Deshpande	Mahaluxmi
3	Machine Drawing	N. D. Bhatt	Charotor Publication House
4	Computer Aided Engineering Drawing	S. Trymbaka Murthy	-I.K. International Publishing House Pvt. Ltd., New Delhi.

Reference Books:

Sr. No	Title	Author(s)	Publisher
1	"Engineering Drawing and Graphics"	K. Venugopal	New Age Publication
2	"Engineering Drawing"	N. B. Shaha and B.C. Rana	Pearson Education
3	Machine Drawing"	K. L. Narayana	, New Age Publication
4	Working with AutoCAD 2000"	Ajeet Sing	Tata McGraw Hill

Online Resources: Unit No Online Resource Link Source

https://archive.nptel.ac.in/courses/112/105/112105294/ NPTEL
https://archive.nptel.ac.in/courses/112/104/112104172/ NPTEL
https://archive.nptel.ac.in/courses/112/102/112102304/ NPTEL
https://nptel.ac.in/courses/112103019 NPTEL

Course Title : Design Thinking Through Innovation	
Course Code:- DTTI24FE115	**Semester: I**
Teaching Scheme L-T-P : 1-0-0	**Credits : 01**
Evaluation Scheme:- ISE 25	**ESE Marks (50 marks) : --**

Prior Knowledge of:	The Design Thinking & Innovations subject aim at providing students with the tools and exposure to be able to address problems using the design thinking process. The curriculum for "Design Thinking through Innovations" structured in such a way students learn to acquire both knowledge of design and practice of skills required to develop an attitude towards design. Being of the exemplary kinds, it focuses more on hands-on knowledge, learnt by doing and acting upon challenges discovered within the community and surroundings.

Course Objectives:

1.	To Familiarize with Engineering Design Process and The basics of Design Thinking
2.	To Bring Awareness on Idea Generation to Solve the Problems
3.	To Familiarize with the various types of prototype and the techniques used for prototyping.

Curriculum Details

Course Contents	Duration
Unit I: Engineering Design, Design Thinking and Idea Generation • Introduction ,Key Concepts of Design, A Simplified Process of Engineering Design • What is Design Thinking? - Its Importance, Socio-Economical Relevance, Principles, Origin, Process of Design Thinking, Relevance of Design and Design Thinking in Engineering • Introduction to Idea Generation, Idea Generation Techniques, Processes, Define the Problem, Needs v/s Wants, Identify Philosophy, Problem Solving Tools, Case Studies • Critical thinking: Fundamentals, Characteristics, Critical v/s Ordinary Thinking. • Critical thinking skills- linking ideas, structuring arguments, five pillars of critical thinking.	**07Hrs**
Unit II: Prototyping and Tools for Design -Innovation • Prototyping: Introduction, Need, Process, Types, Fidelity for prototypes, Minimum Usable Prototype [MUP] – Concept, challenges, etc. • Prototyping for Digital &Physical products: Concept, What is unique in Digital and Physical Prototypes? • Digital & Physical prototypes: Preparation; testing prototypes with users. • Introduction to Different tools used for design and Innovation, such as Hand Saw (Wood, PVC, CPVC and Steel),Component cutter, Spanners, Allen key & Wrench (Flat, Ring, Adjustable), Solder Gun, Component cutter, Tweezer, Multimeter, Glue Gun, Hex saw, Cutter, Wire Stripper.	**07Hrs**

Course Outcomes (COs): After successful completion of the course, students will be able to:

CO	Statements
115.1	**Learn** Structured Approach of Engineering Design and the Relevance of Design and Design Thinking in Engineering & **Understand** Idea Generation Techniques to find out solutions to the Problems.
115.2	**Understand** the various types of prototype and **Inculcate** the techniques used for prototyping.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

POs / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
1	1	3	1	0	2	1							
2	2	3	2	2	2	1							

Suggested Learning Resources:

Text Books:

Sr. No	Title	Author(s)	Publisher	Year
1.	Introduction to Design Thinking	S.Salivahanan, S.Suresh Kumar, D.Praveen Sam	Tata Mc Graw Hill, First Edition	2019
2.	The Design Thinking Playbook	Michael Lewrick	Wiley	2019
3.	Prototyping for Designers: Developing the best Digital and Physical Products	Kathryn McElroy	O'Reilly	2017
4.	"Design Thinking: Understand – Improve– Apply"	Hasso Plattner, Christoph Meine and Larry Leifer (eds)	Springer	2011

Reference Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1.	Design Thinking – New Product Essentials from PDMA	1st	Michael G. Luchs, Scott Swan , Abbie Griffin	Wiley	2015
2.	101 Design Methods: A Structured Approach for Driving Innovation in Your Organization	1st	Vijay Kumar	Wiley	2012

Useful Link /Web Resources:

Sr. No.	Online Resource Link	Source
1	Introduction to Design Thinking - Course (swayam2.ac.in) Design Thinking Full Course | Design Thinking Process | Design Thinking For Beginners | Simplilearn - YouTube	Swayam (NPTEL)&YouTube
2	Thinking at IDEO - Insight, innovation, & a healthy dose of play	IDEO
3	INTRO (youtube.com)	YouTube
4	The Power of an Entrepreneurial Mindset | Bill Roche | TEDxLangleyED (youtube.com)	YouTube
5	https://www.ideou.com/pages/design-thinking	IDEO U
6	https://dschool.stanford.edu/	Stanford D school
7	https://www.designthinkersacademy.com/usa/	Design Thinking Institute
8	https://www.ibm.com/design/thinking/page/toolkit	Design thinking Tool Kit
9	https://hbr.org/2018/09/design-thinking-is-fundamentally-conservative-and-preserves-the-status-quo	

Course Title: Design Thinking Through Innovation Lab	
Course Code : DTTI24FE115P	**Semester: I**
Teaching Scheme: L-T-P: 0-0-1	**Credit : 1**
Evaluation Scheme: INT 25 marks	**ESE/POE/OE Marks: --**

Prior Knowledge of:	The Design Thinking & Innovations subject aim at providing students with the tools and exposure to be able to address problems using the design thinking process. Design Thinking & Innovations is designed in such a way students learn to acquire both knowledge of design and practice of skills required to develop an attitude towards design. Being of the exemplary kinds, it focuses more on hands-on knowledge, learnt by doing and acting upon challenges discovered within the community and surroundings.

Course Objectives:

1.	To Discuss Various Techniques of Idea Generation.
2.	To Explain the Various Tools Used for Innovation.
3.	To Discuss the Methods of Implementing Design Thinking in The Real World.
4.	To Discuss the Implementation of Creativity and Innovation.

List of Experiments-

Exp. No	Title of Experiments	Duration (Hrs)
01	Overview of Design Thinking: Ethical Design and Critiques, Generation of "IDEA", Problem Identification and Exercises.	2
02	Brainstorming Sessions to Find out Solution for Identified Problems	2
03	Prototyping and Modelling Challenge, Various Tools and Methodology Used for the Prototyping.	2
04	Hands-On Demonstration of Different Tools used for Design & Innovation.	2
05	Hands-On Demonstration of Soldering Machine, Function and Purpose of Soldering Machine.	2
06	Explanation and Usage of Joining & Insulation Tools and Technics.	2
07*	Assembly and Disassembly of Two Wheel Drive Robot Based Vehicle.	4
08	Micro Project: Group Formation and Idea Generation.	2
09	Creation of Prototype and Innovative Solution.	4
10	Test and Evaluation of Prototype.	2
11	Report Drafting - Instructions & Practices.	2
12	Presentation & Exhibition.	4

***Experiment- Mechanical: Assembly and Disassembly of Two Wheel Drive Robot Based Vehicle**.

Perform minimum 8 experiments out of the above 12 experiment.

Course Outcomes (COs): After successful completion of the course, students will be able to:

CO	Statements
115P.1	**Learn** Structured Approach of Engineering Design and the Relevance of Design and Design Thinking in Engineering &**Understand** Idea Generation Techniques to find out solutions to the Problems.
115P.2	**Understand** the various types of prototype and **Inculcate** the techniques used for prototyping.

Course Articulation Matrix: Mapping of Course Outcomes (Cos) with Program Outcomes (PO's)

PO's / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
1	1	3	1	0	2	1							
2	2	3	2	2	2	1							

Suggested Learning Resources: --

Reference Books:

Sr. no.	Name of Book	Author	Year
1.	Design Thinking: Understand-Improve-Apply	S. G. Blank	2007
2.	Design Thinking for Innovation Research and Practice	Walter Brenner, Falk Uebernickel, Springer	2016
3.	Business Design Thinking and Doing: Frameworks, Strategies and Techniques for Sustainable Innovation	Angele M. Beausoleil	2022

Useful Link /Web Resources:

Sr. No.	Online Resource Link	Source
1	Introduction to Design Thinking - Course (swayam2.ac.in) Design Thinking Full Course | Design Thinking Process | Design Thinking For Beginners | Simplilearn - YouTube	Swayam (NPTEL) &YouTube
2	Thinking at IDEO - Insight, innovation, & a healthy dose of play	IDEO
3	INTRO (youtube.com)	YouTube
4	The Power of an Entrepreneurial Mindset | Bill Roche | TEDxLangleyED (youtube.com)	YouTube
5	https://www.ideou.com/pages/design-thinking	IDEO U
6	https://dschool.stanford.edu/	Stanford D school
7	https://www.designthinkersacademy.com/usa/	Design Thinking Institute
8	https://www.ibm.com/design/thinking/page/toolkit	Design thinking Tool Kit
9	https://hbr.org/2018/09/design-thinking-is-fundamentally-conservative-and-preserves-the-status-quo	

D.Y. PATIL TECHNICAL CAM PUS

FACULTY OF ENGINEERING & FACULTY OF MANAGEMENT,

(An Autonomous Institute)

Department of First Year Engineering

F. Y. B. Tech. Curriculum

Programme: Electrical Engineering w. e. f. A.Y. 2024-2025

Course Title : Professional Communication	
Course Code: PC24FE116	**Semester:** - I
Teaching Scheme L-T-P : 1-0-0	**Credits : 1**
Evaluation Scheme: ISE 25	**ESE Marks: --**
Prior Knowledge of: 1. Basic knowledge of grammar. 2. Basic knowledge of Listening and Reading comprehension.	

Course Objectives:

1	To acquaint students with basic English Grammar and help students in improving language skills
2	To familiarize students with concept, various types, barriers and filters of communication
3	To assist students in developing Vocabulary
4	To train the students to compose and write the business letters effectively

Curriculum Details

Course Contents	Duration
Unit I: Language and Communication • Need for effective communication • The process of communication • Technical communication • Barriers to communication and solutions	2 Hrs
Unit II: Behavioural Skills • Positive attitude • Introduction to behavioural skills • Understanding Self • Corporate etiquettes and ethics	3 Hrs

Unit III: Grammar & Vocabulary • Tenses • Parts of speech • Modal auxiliaries • Vocabulary building • Common Errors in communication	3 Hrs
Unit IV: Communicative skills • Listening • Speaking • Reading • Writing	3 Hrs
Unit V: Career Skills • Job application writing • Resume writing • E-mail Writing • Interview skills	3 Hrs

Course Outcomes (COs): After successful completion of the course, students will be able to:

CO	Statements
1	Understand basic concepts of communication.
2	Apply LSRW skills in real life.
3	Explain communicative techniques
4	Recall appropriate vocabulary

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

POs / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
CO1	2	-	-	-	-	-	-	-	2	2	2		1
CO2	2	-	-	-	-	-	-	-	2	2	2		1
CO3	2	-	-	-	-	-	-	-	2	2	2		1
CO4	2	-	-	-	-	-	-	-	2	2	2		1

Suggested Learning Resources:

Text Books:

Sr. No	Title	Edition	Author(s	Publisher	Year
1	Business Communication	Third Edition	S. Kalia and S. Agarwal Wiley	Wiley	2015
2	Technical Communication	Fourth Edition	Meenakshi Raman and Sangeeta Sharma	OUP	2013

Reference Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	High School English Grammar and Composition	Second Edition	Wren and Martin	Blackie	2000
2	Business Communication	Second Edition	Raymond Lesikar et al.	McGraw Hill	2007

D.Y. PATIL TECHNICAL CAM PUS

FACULTY OF ENGINEERING & FACULTY OF MANAGEMENT,

(An Autonomous Institute)

Department of First Year Engineering

F. Y. B. Tech. Curriculum

Programme: Electrical Engineering w. e. f. A.Y. 2024-2025

Course Title: Professional Communication Laboratory	
Course Code : PC24FE116P	**Semester: I**
Teaching Scheme: L-T-P: 0-0-2	**Credit : 1**
Evaluation Scheme: INT 25	**ESE Marks: --**
Prior Knowledge of: Basic English grammar, LSRW skills	

Course Objectives:

1.	To practice and assess LSRW skills of the students.
2.	To provide them ample practice for developing their LSRW skills
3.	To strengthen their grammatical competence through practice
4.	To help for technical writing.

List of practical

Exp. No	Title of practical	Duration
01	Introducing self and others Adjectives, phrases and clauses to describe oneself and others Introducing oneself and others-demonstration	2Hrs
02.	Phonetics introduction I	2Hrs
03.	Phonetics introduction II	2Hrs
04	Grammar: Common Errors , Framing Sentences , Vocabulary Building	2Hrs
05	Listening practice Listening comprehension, Strategies for effective listening	2Hrs
06	Speaking practice-Video samples of effective and ineffective public speeches	2Hrs
07	Interview FAQs in detail, video samples, , Do's and Don'ts,	2Hrs
08	Technical writing - Letter writing, report writing, meeting of minutes	2Hrs
09	Group discussion	2Hrs
10	Reading skills Newspaper reading,	2Hrs
11	Professional Correspondence- Email, Resume writing	2Hrs
12	Story telling: Practicing narration methods and techniques for effective narration.	2Hrs

Course Outcomes (COs): After successful completion of the course, students will be able to:

CO	Statements
1	Understand English Sounds, stress patterns and intonation.
3	Use communication skills effectively.
3	Use of grammar rules properly.
4	Prepare oral presentations effectively

Course Articulation Matrix: Mapping of Course Outcomes (Cos) with Program Outcomes (PO's)

PO's / COs	BTL	1	2	3	4	5	6	7	8	9	10	11	12
CO1	2	-	-	-	-	-	-	-	2	2	2		1
CO2	2	-	-	-	-	-	-	-	2	2	2		1
CO3	2	-	-	-	-	-	-	-	2	2	2		1
CO4	2	-	-	-	-	-	-	-	2	2	2		1

Suggested Learning Resources: --
Text Books/ Software
Reference Books:

Sr. No	Title	Edition	Author(s)	Publisher	Year
1	Better English Pronunciation	Second	J.D. O'Connor	OUP	1980
2	A Practical Course in Spoken English	First	J.K. Gangaj	PHI Learning Pvt. Ltd	2014

Course Title : National Service Scheme	
Course Code : NSS24FE117	**Semester: I**
Teaching Scheme L-T-P : 1-0-2	**Credits : 2**
Evaluation Scheme : INT 50 marks	**ESE/POE/OE Marks: ---**

Prior Knowledge of:	**Basic Understanding of Social Issues:** General awareness of common social challenges like poverty, illiteracy, environmental issues, etc. **Interest in Community Service:** A genuine interest in helping others and contributing to society. **Communication Skills:** Basic communication skills will be helpful during community interactions and group activities. **Teamwork:** Openness to working in teams, as many activities are collaborative.

Course Objectives:

1.	**Develop Social Responsibility:** To encourage students to actively contribute to society through community service.
2.	**Foster Personal Growth:** To enhance leadership, teamwork, and communication skills.
3.	**Promote Community Awareness:** To increase understanding of societal issues and challenges.
4.	**Encourage Sustainable Practices:** To instill environmental consciousness and promote sustainable development through practical activities.

Curriculum Details:-

Course Contents	Duration
Unit 1: • **Introduction to NSS** - History and Objectives of NSS - Motto, Symbol, and Badge of NSS - NSS Organizational Structure - Role of NSS in the Personality Development of Students • **Understanding the Community & NGOs** - Identification of Community Needs - Role of NSS Volunteers in Community Development - Role of NGOs in Social Development Process of NGO Formation	**7 Hrs**
Unit 2: • **Health, Hygiene, and Environment Sustainability** - Importance of Health, Hygiene, and Sanitation - First Aid and Emergency Care - Environmental Issues and Challenges - Role of NSS in Environmental Conservation • **Disaster Management** - Types of Disasters and Their Impact - Preparedness and Mitigation Strategies - Role of NSS in Disaster Management	**7 Hrs**

List of Activities:-

Exp. No	Title	Duration (Hrs)
01	**Use of technology for society:** Organize tech-based projects that can address local community issues.	2 Hrs.
02	**Campus Cleanliness Drive:** Organize a cleanliness drive within the campus, encouraging waste segregation and eco-friendly practices.	2 Hrs.
03	**Tree Plantation:** Conduct a tree plantation drive in designated campus areas, emphasizing environmental sustainability.	2 Hrs.
04	**First Aid Workshop:** Hands-on workshop on basic first aid and CPR techniques, to be taught by a professional.	2 Hrs.
05	**Waste Management System:** Introduce waste segregation methods and set up a waste management system in key areas of the campus.	2 Hrs.
06	**Health and Hygiene Awareness: Conduct** an awareness session on personal hygiene and preventive healthcare for students and staff.	2 Hrs.
07	**Energy Conservation Drive: Organize** a campaign promoting energy-saving practices, such as switching off lights and conserving electricity.	2 Hrs.
08	**Water Conservation Project:** Develop a small project on water conservation, like rainwater harvesting or reducing water waste on campus.	2 Hrs.
09	**Swachh Bharat Activity:** Lead a cleanliness drive focused on a specific area of the campus, documenting before-and-after effects.	2 Hrs.
10	**Street Play on Social Issues:** Develop and perform a street play addressing a relevant social issue such as gender equality or literacy.	2 Hrs.
11	**Role of Youth in National Integration:** Host an interactive session or group discussion on how young people can contribute to national integration, fostering a sense of unity and patriotism.	2 Hrs.
12	**Gender Equality Awareness Campaign:** Organize a campaign or workshop to promote gender equality, highlighting the importance of equal opportunities for women in education, employment, and leadership.	2 Hrs.
13	**Female Leadership in Society:** Invite successful women leaders to share their experiences and inspire students to take leadership roles, highlighting the impact of female empowerment in community development.	2 Hrs.
14	**Self-Defense Training for Women:** Conduct a practical session focused on basic self-defense techniques for female students and staff, raising awareness of personal safety and empowerment.	2 Hrs.
15	**NSS Volunteer Interaction:** Hold an interaction session where NSS volunteers share their experiences and discuss the impact of NSS activities.	2 Hrs.

Course Outcomes (COs): After successful completion of the course, students will be able to:

CO	Statements
1	**Social Awareness:** Students will develop a deep understanding of societal issues and their roles in addressing them.
2	**Leadership and Teamwork:** Students will enhance their leadership abilities and teamwork skills through active participation in community service.
3	**Practical Skills:** Students will gain hands-on experience in organizing and executing community service projects.
4	**Civic Responsibility:** Students will foster a sense of civic duty and responsibility, contributing to nation-building and sustainable development.

Course Articulation Matrix: Mapping of Course Outcomes (Cos) with Program Outcomes (PO's)

PO's / CO's	BTL	1	2	3	4	5	6	7	8	9	10	11	12
1	2						3	3	3	3			
2	2						3	3	3	3			
3	2						3	3	3	3			
4	2						3	3	3	3			

Suggested Learning Resources: --

Textbooks:

1. **"National Service Scheme Manual"** - Published by the Ministry of Youth Affairs and Sports, Government of India.
2. **"Community Organization and Development"** by G.R. Madan - A comprehensive guide on social work and community development.
3. **"Social Work: An Integrated Approach"** by Sanjay Bhattacharya - Focuses on social work principles and practices relevant to NSS activities.

Reference Books:

1. **"Leadership and Personality Development"** by Kiran Bedi - Insights into leadership qualities and personal development.
2. **"Environmental Studies: From Crisis to Cure"** by R. Rajagopalan - Covers environmental issues and sustainable practices.
3. **"Disaster Management"** by R.B. Singh - A useful resource for understanding disaster preparedness and management.

Government Websites:

1. **National Service Scheme (NSS) Official Website:** https://nss.gov.in - Official guidelines, resources, and updates from the Ministry of Youth Affairs and Sports.
2. **Ministry of Youth Affairs and Sports:** https://yas.nic.in - Information on youth programs, including NSS.
3. **National Disaster Management Authority (NDMA):** https://ndma.gov.in - Resources on disaster management and preparedness.
4. **Swachh Bharat Mission:** https://swachhbharat.mygov.in - Government initiatives on cleanliness and hygiene.

Activity Details

1. Use of Technology for Society

- **Activity:** Showcase how technology can solve societal problems.
- **Innovative Add-ons:**
  - **Poster Making:** Students design posters on innovative tech solutions (e.g., apps for health, education, farming).
  - **Presentation in Classes:** Groups present tech-based projects that can address local community issues.
  - **Awareness Rally:** Conduct a rally showcasing how technology can improve the quality of life, carrying banners highlighting tech solutions.

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2. Campus Cleanliness Drive

- **Activity:** Conduct a cleanliness drive on campus.
- **Innovative Add-ons:**
  - **Poster Making:** Create posters on cleanliness and the importance of waste segregation.
  - **Slogan Contest:** Hold a contest for the best slogans encouraging cleanliness.
  - **Awareness Rally:** Organize a campus-wide rally promoting "Swachh Campus" ideals.
  - **Sticker Campaign:** Place stickers in classrooms and common areas reminding students to keep the campus clean.

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3. Tree Plantation

- **Activity:** Organize a tree plantation drive on campus.
- **Innovative Add-ons:**
  - **Poster Making:** Design posters on the importance of tree plantation for combating climate change.
  - **Tree Adoption:** Each student adopts and takes care of a tree, monitoring its growth.
  - **Awareness Campaign:** Organize a social media campaign highlighting the trees planted, encouraging others to join.
  - **Sticker Campaign:** Create stickers promoting "Go Green" and place them around campus.

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4. First Aid Workshop

- **Activity:** Hands-on workshop on basic first aid and CPR.
- **Innovative Add-ons:**
  - **Poster Presentation:** Create posters showing basic first aid steps and display them in high-traffic areas.

- **Demo Video:** Record students performing first aid steps and create a tutorial for campus-wide sharing.
- **Awareness Drive:** Organize a demonstration booth where students can teach others basic first aid techniques.

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5. Waste Management System

- **Activity:** Implement a waste segregation and management system on campus.
- **Innovative Add-ons:**
  - **Poster Making:** Design posters explaining waste segregation and recycling processes.
  - **Awareness Rally:** Organize a rally with slogans promoting recycling and reducing plastic use.
  - **Sticker Campaign:** Place stickers on waste bins to remind students about segregating waste properly (e.g., “Recycle Here”).
  - **Poster Presentation:** Create infographics about the environmental impact of waste, displayed in common areas.

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6. Health and Hygiene Awareness

- **Activity:** Conduct a session on health and hygiene for students and staff.
- **Innovative Add-ons:**
  - **Poster Making:** Design posters on personal hygiene practices and display them in restrooms and canteens.
  - **Awareness Rally:** Organize a rally promoting personal hygiene and public health.
  - **Interactive Workshop:** Include live demonstrations on handwashing and hygiene habits.
  - **Sticker Campaign:** Create stickers for restrooms reminding people to wash hands regularly.

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7. Energy Conservation Drive

- **Activity:** Organize a campaign promoting energy-saving practices.
- **Innovative Add-ons:**
  - **Poster Making:** Design posters with energy-saving tips (e.g., "Turn off lights when not in use").
  - **Sticker Campaign:** Create stickers for light switches and equipment reminding users to conserve energy.
  - **Energy Audit:** Conduct a campus energy audit, finding areas where energy is being wasted and suggest solutions.
  - **Presentation in Classes:** Present findings from the energy audit and promote energy-saving practices among peers.

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8. Water Conservation Project

- **Activity:** Develop a small project for water conservation (e.g., rainwater harvesting).
- **Innovative Add-ons:**
  - **Poster Making:** Design posters promoting water-saving habits (e.g., "Save Water, Save Life").
  - **Sticker Campaign:** Place stickers near taps reminding users to turn off water after use.
  - **Water Audit:** Conduct a campus water usage audit and propose water-saving measures.
  - **Awareness Rally:** Organize a rally promoting the importance of water conservation.

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9. Swachh Bharat Activity

- **Activity:** Lead a campus cleanliness drive in a specific area.
- **Innovative Add-ons:**
  - **Poster Making:** Design posters on the Swachh Bharat mission and its goals.
  - **Before-and-After Photo Contest:** Organize a contest encouraging students to take "before-and-after" photos of areas cleaned.
  - **Awareness Rally:** Conduct a rally promoting Swachh Bharat ideals across campus.
  - **Social Media Campaign:** Use social media to highlight the impact of your cleanliness drives.

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10. Street Play on Social Issues

- **Activity:** Develop and perform a street play on social issues like gender equality or literacy.
- **Innovative Add-ons:**
  - **Poster Making:** Create posters that introduce the theme of the play and distribute them before the performance.
  - **Flash Mob:** Combine the street play with a flash mob to gather attention in high-traffic campus areas.
  - **Classroom Presentations:** Perform the street play in various classes to reach more students.

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11. Role of Youth in National Integration

- **Activity:** Host a session or group discussion on youth's contribution to national integration.
- **Innovative Add-ons:**
  - **Poster Making:** Create posters showing how youth can promote national unity and diversity.
  - **Interfaith Dialogue:** Organize a dialogue between students from different religions and cultures to foster understanding.
  - **Awareness Rally:** Conduct a unity rally celebrating cultural diversity and national integration.

12. Gender Equality Awareness Campaign

- **Activity:** Organize a workshop to promote gender equality.
- **Innovative Add-ons:**
  - **Poster Making:** Design posters showing the importance of gender equality and display them around campus.
  - **Slogan Contest:** Organize a contest for the best gender equality slogan.
  - **Awareness Rally:** Conduct a rally advocating for gender equality with banners and slogans.

13. Female Leadership in Society

- **Activity:** Invite successful women leaders to share their experiences.
- **Innovative Add-ons:**
  - **Poster Making:** Create posters highlighting female leaders from various fields.
  - **Panel Discussion:** Organize a panel discussion with women leaders and encourage students to interact.
  - **Role Model Campaign:** Run a social media campaign featuring stories of inspiring women leaders.

14. Self-Defense Training for Women

- **Activity:** Conduct a self-defense workshop for female students and staff.
- **Innovative Add-ons:**
  - **Poster Making:** Create posters on personal safety tips and display them around campus.
  - **Interactive Demo:** Record the self-defense training and create a short tutorial video to share with other students.
  - **Awareness Rally:** Organize a rally promoting women's safety and empowerment.

15. NSS Volunteer Interaction

- **Activity:** Hold an interaction session where NSS volunteers share their experiences.
- **Innovative Add-ons:**
  - **Poster Making:** Create posters showcasing key achievements of NSS volunteers and their impact on society.
  - **Panel Discussion:** Invite senior NSS volunteers to discuss challenges and best practices in community service.
  - **Experience Sharing Event:** Organize an event where students present their NSS experiences using photos and videos.