ESTD. 1939

KARNATAK LAW SOCIETY'S

GOGTE INSTITUTE OF TECHNOLOGY

"JNANA GANGA" UDYAMBAG, BELAGAVI-590008,
KARNATAKA, INDIA.
Approved by AICTE and UGC
Permanently Affiliated and Autonomous Institution
Under
Visvesvaraya Technological University, Belagavi
www.git.edu

ESTD. 1979

Consolidated Syllabus for Sports, Clubs, NSS

Electronics and Communication Engineering

(2021 Scheme)

INSTITUTION VISION
Gogte Institute of Technology shall stand out as an institution of excellence in technical education and in training individuals for outstanding caliber, character coupled with creativity and entrepreneurial skills.

MISSION
To train the students to become Quality Engineers with High Standards of Professionalism and Ethics who have Positive Attitude, a Perfect blend of Techno-Managerial Skills and Problem-solving ability with an analytical and innovative mindset.

QUALITY POLICY
• Imparting value-added technical education with state-of-the-art technology in a congenial, disciplined and a research-oriented environment. • Fostering cultural, ethical, moral and social values in the human resources of the institution. • Reinforcing our bonds with the Parents, Industry, Alumni, and to seek their suggestions for innovating and excelling in every sphere of quality education.

DEPARTMENT VISION
The Electronics & Communication Engineering department shall impart quality technical education and entrepreneurship skills to develop creative individuals to face changing global scenario.

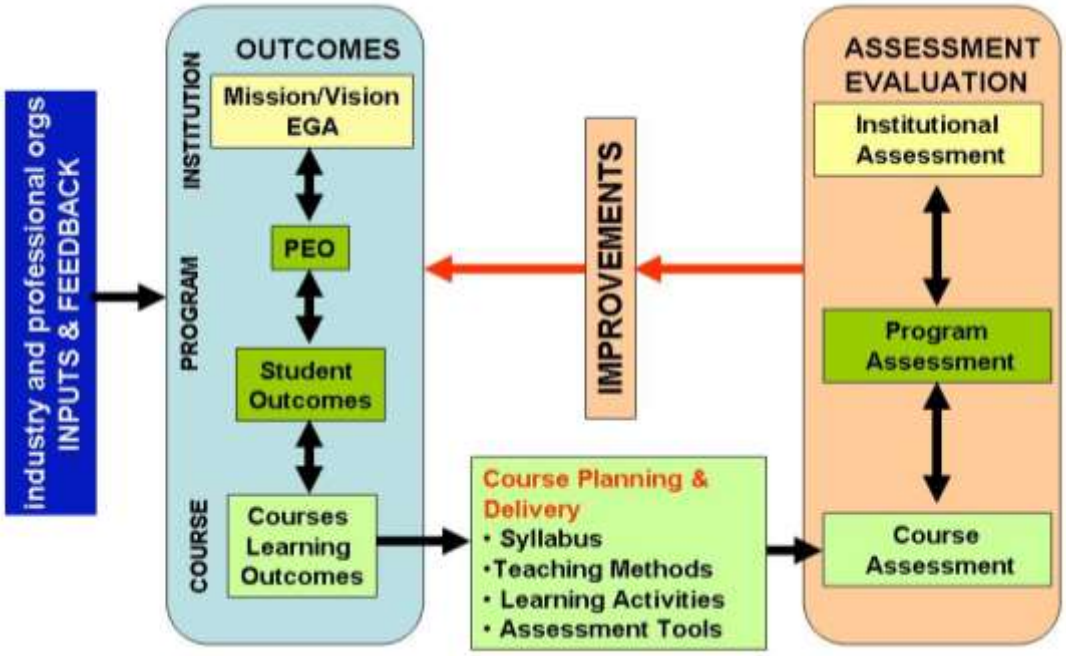
DEPARTMENT MISSION
To augment the national talent pool, with Electronics and Communication Engineers having all-encompassing technical knowledge, principled practices and nationalistic outlook.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)	
1.	The graduates will acquire core competence in basic science and Electronics and Communication Engineering fundamentals necessary to formulate, analyze, and solve engineering problems and to pursue advanced study or research.
2.	The graduates will engage in the activities that demonstrate desire for ongoing personal and professional growth and self-confidence to adapt to rapid and major changes.
3.	The graduates will maintain high professionalism and ethical standards, effective oral and written communication skills, work as part of teams on multidisciplinary projects under diverse professional environments, and relate engineering issues to the society, global economy and to emerging technologies.

PROGRAM OUTCOMES (POs)	
1.	**Engineering Knowledge:** Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2.	**Problem Analysis:** Identify, formulate, 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 specified needs with appropriate consideration for public health and safety, 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 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 modelling to complex engineering activities with an understanding of the limitations.
6.	**The Engineer and Society:** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.
7.	**Environment and Sustainability:** Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
8.	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of 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 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 lifelong learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)	
1.	Understanding and applying the mathematical and scientific concepts, for analysis and design of basic Electronics and Communication systems.
2.	Developing critical thinking abilities coupled with competence in use of computational tools for professional growth; complimented with communication skills and leadership attributes.
3.	Identifying societal needs and sensitizing individuals towards finding innovative solutions to contemporary issues with multidisciplinary outlook.

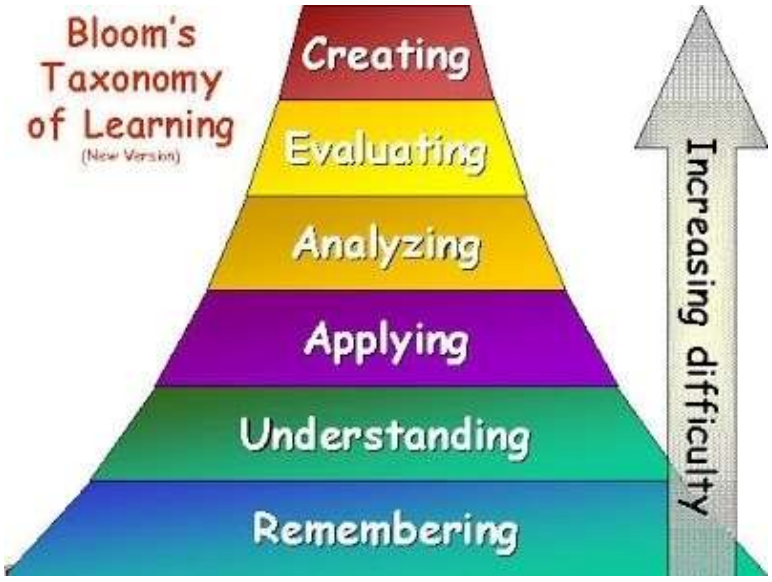
OUTCOME BASED EDUCATION (OBE)



BLOOM'STAXONOMYOFLEARNINGOBJECTIVES

Bloom's Taxonomy in its various forms represents the process of learning. It was developed in 1956 by Benjamin Bloom and modified during the 1990's by a new group of cognitive psychologists, led by Lorin Anderson (a former student of Bloom's) to make it relevant to the 21stcentury. The **revised taxonomy** given below emphasizes what a learner "Can Do".

Lower order thinking skills (LOTS)		
L1	Remembering	Retrieve relevant knowledge from memory.
L2	Understanding	Construct meaning from instructional material, including oral, written, and graphic communication.
L3	Applying	Carry out or use a procedure in a given situation–using learned knowledge.
Higher order thinking skills (HOTS)		
L4	Analyzing	Breakdown knowledge into its components and determine the relationships of the components to one another and then how they relate to an overall structure or task.
L5	Evaluating	Make judgments based on criteria and standards, using previously learned knowledge.
L6	Creating	Combining or reorganizing elements to form a coherent or functional whole or into a new pattern, structure or idea.



Contents

ACM STUDENT CHAPTER

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Promote technical and professional development of students
2.	Foster a sense of community and collaboration
3.	Encourage research and innovation
4.	Promote diversity and inclusion

Pre-requisites: nil

One week workshop on data analytics	**Contact Hours = 25 Hours**
Details of the Activity The Data Analytics Workshop is a comprehensive one-week program designed to equip students with essential skills and knowledge in the field of data analytics. This workshop aims to introduce students to the fundamentals of data analysis, statistical techniques, data visualization, and machine learning algorithms. By the end of the workshop, participants will gain practical experience in working with data, analyzing insights, and making data-driven decisions. The workshop will end with students solving a data analytics problem given by the industry personnel	

Ignite: 24 hours Hackathon	**Contact Hours = 24 Hours**
Ignite is a thrilling 24-hour hackathon that aims to bring together aspiring engineers and innovators to explore and tackle emerging trends in the field of engineering. This high-energy event provides participants with a platform to showcase their creativity, problem-solving skills, and technical expertise. Throughout the hackathon, participants will collaborate in teams to develop innovative solutions that address real-world challenges posed by the latest trends in engineering.	

ExploreTech: Awareness Sessions on Recent Technologies for School Students by Engineering Students	**Contact Hours = 10 Hours**
Details of the Activity ExploreTech is a dynamic initiative aimed at introducing school students to recent and emerging technologies, empowering them to embrace and understand the rapidly evolving digital world. Led by enthusiastic engineering students, these awareness sessions provide an engaging platform for students to explore cutting-edge technologies such as artificial intelligence, Internet of Things (IoT), virtual reality, robotics, and blockchain. Through interactive demonstrations, discussions, and hands-on activities, ExploreTech sparks curiosity and inspires students to pursue careers in STEM fields.	

Tech Quest	**Contact Hours = 08 Hours**
Details of the Activity TechQuest is an exhilarating event that combines the thrill of a treasure hunt with the excitement of technology. It challenges participants to solve a series of technical puzzles, riddles, and challenges to unlock clues and navigate their way to the ultimate treasure. TechQuest provides a unique platform for participants to showcase their problem-solving abilities, technical knowledge, and teamwork skills while fostering a spirit of friendly competition and innovation.	

Tech Expo	**Contact Hours = 20 Hours**
Details of the Activity TechExpo is an event that celebrates the wonders of technology through an immersive and captivating experience. It brings together enthusiasts, professionals, and industry leaders to showcase the latest advancements, cutting-edge innovations, and future possibilities across various technical domains. TechExpo offers a unique platform for attendees to explore, learn, and engage with the forefront of technology in an interactive and awe-inspiring setting.	

Course delivery methods		**Assessment methods**	
1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	IA tests

Course Outcome (COs)

At the end of the course, the student will be able to (Highlight the **action verb** representing the learninglevel.)

Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	**Understand, Analyze and apply** the latest advancements, trends, and concepts in their specific technical domain.	Un, An, Ap	1,2,3,5,8,9,10,12	1,2
2.	Effectively **communicate** their ideas, collaborate with others, and articulate their **understanding** of the technical concepts presented.	Un, Cr,Ap	1,2,3,5,6,8,9,10,12	1,2,3

Scheme of Continuous Internal Evaluation (CIE):

Components	Development of solution/ presentation	Report	Total Marks
Marks	50	50	100

CO-PO Mapping (Planned)													CO-PSO Mapping (Planned)		
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**	**PSO3**
1	✓	✓	✓		✓			✓	✓	✓		✓	✓	✓	
2	✓	✓	✓		✓	✓		✓	✓	✓		✓	✓	✓	✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members
involved in designing the syllabus

Name & Signature of Faculty members
verifying/approving the syllabus

ASTRONOMY CLUB

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	To learn about stellar maps
2.	To learn about the sun and the moon
3.	To study motion of planets and their satellites
4.	To study deep sky objects

Pre-requisites: Nil

Activity– I Stellar maps	**Contact Hours = 12 Hours**
Learn about the stellar maps, celestial coordinates	

Activity– II Optics of telescope	**Contact Hours = 12 Hours**
Study the optics and types of telescopes. To learn about different types of telescopes	

Activity– III The sun and the moon	**Contact Hours = 12 Hours**
Observation of the sun, sunspots, moon, lunar craters.	

Activity– IV Planets	**Contact Hours =12 Hours**
Study of motion of planets and observation of planets.	

Activity– V Star clusters and nebula	**Contact Hours = 12 Hours**
Study and observation of nebula and star clusters.	

Books	
	Text Books:
1.	Frank Shu, The physical Universe
	Reference Books:
1.	H. Karttunen. Fundamental Astronomy, Springer

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	IA tests

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	**Identify constellations and stars**	Re	1	2
2.	**Understand motion of the celestial objects and its observation process**	Un	1	2
3.	**Understand the motion and nature of the stars and planets**	Un	1	2
4.	**Understand the nebula and galaxies**	Un	1	2

Scheme of Continuous Internal Evaluation (CIE):

Components	Activity report - 1	Activity report 2	Activity report - 3	**Activity report -4**	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping (Planned)**		
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**	**PSO3**
1	✓													✓	
2	✓													✓	
3	✓													✓	
4	✓													✓	
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

THE CHANGEMAKER'S' SOCIETY STUDENT CHAPTER

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Identify the needs and problems of the society and finding solutions to the same.
2.	To achieve the United Nations Sustainable Development Goals (SDGs).
3.	To promote the importance of recycling and sustainability.
4.	To aid students in improving certain qualities like communication, decision making, problem solving, creativity and teamwork.

Pre-requisites:

1. Students should have a mindset to bring about a social and sustainable change in the society.
2. Students should have dedication to work at any remote place, anytime with available resources and proper time management for the other works.
3. Students should possess problem solving and teamwork mindset.

Activity– I: Water Management	**Contact Hours= 20 Hours**

Details of the Activity –

1. Proposing solutions for better water management and ways to increase ground water levels.
2. Collaborating and volunteering for water rejuvenation projects.

Activity– II: Rural Survey	**Contact Hours= 20 Hours**

Details of the Activity –

1. Carrying out survey in rural areas about the various government schemes.
2. Making list of people who do not own a voter ID card and explaining them the importance of voting.
3. Data of the various occupation and suggesting the modern techniques that can be used in the respective field.

Activity– III: Sustainability	**Contact Hours= 20Hours**

Details of the Activity –

1. To promote sustainable products.
2. In order to reduce plastic consumption, promoting use of cotton, cloth bags.
3. Importance of reusing existing products.

Activity– IV: Women Empowerment	Contact Hours= 20 Hours
Details of the Activity– 1. Promoting the importance of women in technical workspace. 2. Conducting events surrounding empowering women. 3. Importance of girl child education.	

Activity– V: Digital Commerce	Contact Hours= 20 Hours
Details of the Activity – 1. Survey on the usage of instant real time payment systems like UPI. 2. Encouraging people to carry out trade and commerce through online digital platforms.	

Books	
	Text Books:
1.	Meenakshi P., **"Elements of Environmental Science and Engineering**", Prentice Hall of India Private Limited, New Delhi (2006).
2.	**"Sustainability Engineering: Concepts, Design and Case studies"**, Prentice Hall, 1st Edn,2015
	Reference Books:
1.	Ni bin Chang, **"System Analysis for sustainable Engineering: Theory and applications"**, McGraw Hill Publications,1st Edn.,2010
2.	Toolseeram Ramjeawon, "**Introduction to Sustainability for Engineers"**, CRC Press, 1st Edn.,2020.
	E-resourses (NPTEL/SWAYAM.. Any Other)- mention links
1.	--

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	IA tests

Course Outcome (COs)

At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)

	Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create	**Learning Level**	**PO(s)**	**PSO(s)**
1.	To understand the importance of environment and water crisis	2	1,6,7	3
2.	Application of Sustainable Engineering Concepts and Principles in Engineering	2	1,6,7	2,3

Scheme of Continuous Internal Evaluation (CIE):

Components					Total Marks
Marks					100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping (Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1	✓					✓	✓								✓
2	✓					✓	✓							✓	✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

COMPUTER SOCIETY OF INDIA

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Identify needs and problems of the society and help them in resolving the same.
2.	To impart the computer knowledge to school students.
3.	Make the students industry ready by involving them in various technical competitions.

Pre-requisites: NIL

Activity– I	**Contact Hours = 5 Hours**
1. e-Shrama of Central Government (15M): Students go to various Rural areas and New Building/Apartment Construction areas and help the needy people to get registered to the e-Shrama portal of Central Government. **2. Poster making and Presentation (10M):**Students need to come up with creative ideas in line with the themes given, make digital/handmade poster for the same and present.	

Activity– II	**Contact Hours =5 Hours**
3. Project Shiksha (15M): Students visits various Government schools and disseminate the computer knowledge to school students in different medium of languages. 4. **Web Design (10M):** Students will be asked to design a website for the real world or open-ended problem given to them.	

Activity–III	**Contact Hours = 5 Hours**
4. Coding (25M): Competition for students, where they have to code in C/Python/Java language for the problem statement given to them.	

Activity– IV	**Contact Hours = 5 Hours**
6. Hackathon (25M): It is a social coding event that brings computer programmers and other interested people together to improve upon or build a new software program.	

Books	
	Text Books:
1.	David Griffiths, Head First C: A Brain-Friendly Guide, Shroff, 1st edition
2.	Gerardus Blokdyk, Hackathon A Complete Guide - 2021 Edition

	e-Resources:
1.	https://onlinecourses.swayam2.ac.in/ugc23_ge04/preview

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	Report Writing

Course Outcome (COs)

At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)

Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr – Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	Leadership and team work qualities will be **developed** among students	L3	9, 10, 12	2
2.	**Evaluate** students by using technical skills to address societal issues	L5	1, 2, 3 ,4, 6, 8, 12	2, 3
3.	Allows the concrete **deployment** of new ideas to be organized	L3	1, 2, 3, 12	2
4.	**Enhancement** of professional and technical skills of the students	L4	1,2,3,5,9,10, 12	2

Scheme of Continuous Internal Evaluation (CIE):

Components	**Activity– I**	**Activity–II**	**Activity–III**	**Activity– IV**	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping (Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1									✓	✓		✓		✓	
2	✓	✓	✓	✓		✓		✓				✓		✓	✓
3	✓	✓	✓									✓		✓	
4	✓	✓	✓		✓				✓	✓		✓		✓	
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

FLUID POWER SOCIETY OF INDIA

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	To develop skilled Fluid Power human resources
2.	To Nurture integrity, creativity and entrepreneurship
3.	To create and sustain a Fluid Power community in which students acquire knowledge and skills to apply it professionally with due consideration for ethical, ecological, and economic issues

Pre-requisites:

Activity– I	**Contact Hours = 4 Hours**
Industry visit to Fluid Power industries in and around Belagavi. Internship opportunities in Fluid Power industries. Participation in seminars/webinars related to Fluid Power	

Activity– II	**Contact Hours = 4 Hours**
Visit to schools and teaching the students the basics of Fluid power with mini projects and models.	

Activity– III	**Contact Hours = 4 Hours**
Visit to diploma colleges to organize competitions/projects related to Fluid Power where in the diploma students will get chance to develop their skills, knowledge and their leadership qualities.	

Activity– IV	**Contact Hours =4Hours**
Participation in the Fluid power challenge organized by FPSI. The Fluid Power Challenge is an annual competition platform opened to Engineering students which expands the opportunity for students to apply the concepts of fluid power and come up with innovative design ideas.	

Activity– V	**Contact Hours = 4 Hours**
Community service activity – visit to old age homes, orphanages etc. spending time with the kids and old age people doing some meaningful activities and donations.	

Course delivery methods		**Assessment methods**	
1.	PPT and Videos	1.	Competition

2.	Activity	2.	Activity presentation
4.	Demo/Training	4.	Seminar/Surveys/Assignments

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	To Promote Fluid Power technology and foster an innovative environment for the Fluid Power industry	L2	6,9,12	2,3

Scheme of Continuous Internal Evaluation (CIE):

Components	Activity 1 (Attendance &Report)	Activity 2 (Attendance & Report)	Activity 3 (Attendance & Report)	Activity 4 (Attendance & Report)	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping (Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO1 0**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1						✓			✓			✓		✓	✓
Tick mark the CO, PO and PSO mapping															

Prof. Prajakta Patil

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

IEEE POWER AND ENERGY STUDENT CHAPTER

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	To arrange regular events on the campus specifically dealing with the latest technologies
2.	To strive towards achieving more IEEE-sponsored awards and aim at representing papers in international conferences
3.	To work towards inspiring more students to become members and increase Membership Retention, through the benefits of IEEE
4.	To increase the students interest in publishing technical articles and participation in the technical events.

Pre-requisites :

Activity– I Introduction to Power and Energy Systems	**Contact Hours = 4 Hours**
Overview of power and energy systems, including power generation, transmission, distribution, and utilization. Introduction to the electric power industry, its structure, and key stakeholders. (Industrial visit)	

Activity– II Power System Analysis	**Contact Hours = 4 Hours**
Fundamentals of power system analysis, including power flow analysis, fault analysis, and stability analysis. Introduction to software tools used for power system simulation and analysis. (Technical quizzes)	

Activity– III Renewable Energy Technologies	**Contact Hours = 4 Hours**
Study of various renewable energy sources, such as solar, wind, hydro, and biomass. Analysis of renewable energy integration into the grid, energy storage systems, and emerging trends in renewable energy technologies. (Model making competition)	

Activity–IV Emerging Technologies and Trends	**Contact Hours = 4 Hours**
Exploration of emerging technologies and trends in the power and energy sector, such as electric vehicles, energy storage systems, microgrids, and distributed energy resources. Discussion on their impact on the power system and future energy landscape. (Poster presentation)	

Activity– V Professional Development and Networking	**Contact Hours= 4Hours**

Activities focused on professional development, including workshops, seminars, and guest lectures by industry experts. Opportunities for networking, knowledge sharing, and collaboration with fellow PES members and professionals in the power industry.(Expert talks)

Books	
	Text Books:
1.	"Power System Analysis" by John J. Grainger and William D. Stevenson Jr.
2.	"Distributed Generation and its Implications for the Utility Industry" by Fereidoon P. Sioshansi.
3.	IEEE PES bimonthly magazines
	E-resourses (NPTEL/SWAYAM.. Any Other)- mention links
1.	https://ieee-pes.org/
2.	

Course delivery methods		**Assessment methods**	
1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	IA tests

Course Outcome (COs)

At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)

Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	Students will acquire a solid understanding of power system components, operation, and control. They will learn about power generation, transmission, distribution, and utilization, including topics such as power flow analysis, fault analysis, stability analysis, and protection schemes.	Ap	1,3,5,9,10	2,3
2.	Students will be introduced to energy storage technologies and their applications. They will learn about different types of energy storage systems, such as batteries, flywheels, and pumped hydro storage. They will understand the role of energy storage in grid stabilization, peak shaving, renewable energy integration, and microgrid applications.	Ap	1,3,5,9,10	2,3
3.	Students will develop problem-solving and analytical skills through practical exercises, case studies, and hands-on projects. They will learn to analyze and address power system problems, perform simulations, and apply relevant tools and techniques to optimize power system performance.	Ap	1,3,5,9,10	2,3

Scheme of Continuous Internal Evaluation (CIE):

Components	Activity-1	Activity-2	Activity-3	Activity-4	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping(Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO1 0**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1	✓		✓		✓				✓	✓				✓	✓
2	✓		✓		✓				✓	✓				✓	✓
3	✓		✓		✓				✓	✓				✓	✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

INDIAN RED CROSS SOCIETY (IRCS)

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Enrich the spirit of democratic living.
2.	Uphold the needs and values for selfless services
3.	Learn to appreciate other man's point of view
4.	Realize the welfare of individual dependence of the welfare of the society.

Pre-requisites: Rational Mind, heart of gold, hale hearty body and culturally sound.

Activity– I ENVIRONMENTAL ENRICHMENT & CONSERVATION	**Contact Hours =**

Details of the Activities:

1. Plantation of saplings [their preservation & upkeep/maintenance]
2. Environment awareness seminars and workshops [create consciousness]
3. Cleaning of villages/ neighborhood wells, ponds & lakes
4. Prevention of soil erosion [soil conservation]
5. Preservation of cultural heritage [protect & upkeep of monuments / create awareness]

Activity– II HEALTH, NUTRITION & FAMILY WELFARE PROGRAMS	**Contact Hours =**

Details of the Activities:

1. Health Education / Child development programs [primary health care]
2. Nutrition Programs [Medical college or home science]
3. Clean drinking water programs
4. Medico social Surveys [Cases of malaria, Covid, etc.]
5. Blood Donation camps

Activity– III SOCIAL SERVICE PROGRAMS	**Contact Hours =**

Details of the Activities:

1. Day camp at Hospital/ Old Age [cheer patients / old aged, hobby activity, etc.]
2. Work with NGOs of child welfare.
3. Work in institute for physically handicaps or orphanage
4. Cleaning of slums

Activity– IV WOMEN EMPOWERMENT PROGRAMS	Contact Hours =
Details of the Activities: 1. Educating women about their constitutional & legal rights [both literate & illiterate] 2. Women's contributions to economic & social well-being of the community programs 3. Awareness programs to show all occupations are open to them [Rural women] **4.** Training programs / workshops to rural, illiterate, unskilled, unemployed [Tailoring-sewing]	

Activity– V EMERGENCIES PROGRAMS / CALAMITIES	Contact Hours =
Details of the Activities: [Indian Red Cross Society Related Activities] 1. Assist Govt Depts/ NGOs in distribution of medicines, cloths, grocery, etc. 2. Help Health authorities in immunization & inoculation 3. Work with people in reconstruction [houses, roads, etc.] 4. Support the local authorities in rescue & relief work 5. Collection of cloths, food, etc send them to affected areas	

Books	
	Text Books:
1.	Name of the author(s), Title of the Book, Publisher, Edition/Year _____ and onwards
2.	VTU Handbook
	Reference Books:
1.	Name of the author(s), Title of the Book, Publisher, Edition/Year _____ and onwards
2.	
	E-resourses (NPTEL/SWAYAM.. Any Other)- mention links
1.	
2.	

Course delivery methods		Assessment methods	
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Activity Annual Report
4.	Training/workshops/seminars	4.	

Course Outcome (COs)

At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)

Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	Cater to develop the holistic and integrated persona	Un	6,7,8,9,10	3
2.	Grow passion and compassion for selfless community service	Un	6,7,8,9,10	3
3.	Connect the different peer groups.	Un	6,7,8,9,10	3
4.	Constitutes a bond of patriotism, national integration & communal	Un	6,7,8,9,10	3

	harmony			

Scheme of Continuous Internal Evaluation (CIE):

Components	III sem	IV sem	V sem	VI sem	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping(Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1						✓	✓	✓	✓	✓					✓
2						✓	✓	✓	✓	✓					✓
3						✓	✓	✓	✓	✓					✓
4						✓	✓	✓	✓	✓					✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

THE INDIAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS (ISHRAE)

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Students should identify the technical problem of the society and able to give solutions.
2.	Students should build technical abilities to serve the society.
3.	Students should be ready to sacrifice some of the time and wishes to achieve targets on time.

Pre-requisites: Communication skill, Environmental and safety awareness.

Activity– I Education	**Contact Hours = 4 Hours**
Awareness of latest technologies and development in the rural areas on Design thinking, Net zero energy building, Human comfort * Latest electromechanical devices and Computer literacy.	

Activity– II Agriculture/Food industry	**Contact Hours = 4 Hours**
Visit to the nearby farm and providing alternate solutions Identifying the role of Engineers to support the farmers in their basic needs of food items preservation and pests' control in farming locations and transportations, Improvement in the existing control system of farming/food industry through the solutions in the above said fields*.	

Activity–III Refrigerants and HVAC like systems	**Contact Hours = 4 Hours**
Creating technical awareness for high school/ diploma students regarding HVAC system requirements by workshops, Its proper selection and maintenance as per standards, Hazards, comfort, safety etc*.	

Activity– IV Solar/Renewable energy utilization	**Contact Hours = 4 Hours**
Importance of solar/wind in the buildings. Eco friendly solar/wind etc-applications like in refrigeration, HVAC systems etc * Solar/wind power stations in the buildings or village areas	

Activity– V Health	**Contact Hours = 4Hours**
Visit one of the medical hospital Identify the role of Engineers in medical field, ***Preparing any required comfortable equipment plan/model/report/project in Refrigeration/Heating/Cooling systems from used components or new components (*common for all activities planned).**	

Components	1	2	3	4	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100 **Any Two activities- 100 marks**					

Course delivery methods		**Assessment methods**	
1	Visits	1.	Competition
2	Demo/Training	2.	Activity presentation
3	Activity	3	Seminar/Surveys/Assignments
		4	Report preparation

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	**Apply the technical knowledge to create awareness in improving the society.**	Ap	1,6,10	1,3
2.	**Understand the importance of his / her responsibilities towards society.**	Un	6,8	3
3.	**Apply the engineering skills and develop the multidisciplinary approaches in sharing knowledge and creating models/projects/technical reports.**	Ap	1,10,11	1,2,3

Scheme of Continuous Internal Evaluation (CIE):

CO-PO Mapping (Planned)													CO-PSO Mapping(Planned)		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1	✓					✓				✓			✓		✓
2						✓		✓							✓
3	✓									✓	✓		✓	✓	✓
Tick mark the CO, PO and PSO mapping															

Prashant Kakkamari
Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

INDIAN SOCIETY FOR TECHNICAL EDUCATION

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	To enhance students' skills like practical knowledge, problem-solving abilities, communication skills, leadership qualities, and teamwork capabilities.
2.	To bridge the gap between theoretical learning and practical applications, exposure to real-world engineering practices.
3.	To facilitate students with career guidance and placement support.
4.	To inculcate societal concern, by addressing societal problems.

Pre-requisites : NIL

Activity– I: Skill development (25M)	**Contact Hours = 5Hours**
The chapter focuses on developing technical and non-technical skills of students. Organizing workshops, seminars, and training programs to enhance students' practical knowledge, problem-solving abilities, communication skills, leadership qualities, and teamwork capabilities. **Technical events and competitions:** Organizing technical events, competitions, and project exhibitions to promote innovation, creativity, and technical expertise among students. These events provide students with opportunities to showcase their skills, work on challenging projects, and learn from their peers.	

Activity– II: Industry interaction (25M)	**Contact Hours = 5Hours**
Encouraging interaction and collaboration between students and the industry. It facilitates industrial visits, internships, and guest lectures by industry experts to bridge the gap between theoretical learning and practical applications, and to provide students with exposure to real-world engineering practices.	

Activity– III : Career guidance and placement support (25M)	**Contact Hours = 5Hours**
The chapter assists students in their career planning and provides guidance for higher studies and job placements. It conducts sessions on resume building, interview preparation, and soft skills development to enhance students' employability.	

Activity– IV: Social and community initiatives (25M):	**Contact Hours = 5Hours**

Promoting social responsibility and community engagement among students. Students will participate in social welfare activities (Blood Donation Camp), environmental initiatives (Plantation Drive), and technical outreach (Digital Literacy for School Children) programs that benefit society.

Course delivery methods		**Assessment methods**	
1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	IA tests

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	**Develop** technical skills in their area of interest.	Ap	1,2,3,5	1,2
2.	**Identify** the gap between theoretical learning and practical applications.	Ap	1,2,3,5	1,2
3.	**Examine** the soft skills to enhance employability	An	1,2,3,5	1,2
4.	**Solve** the social and environmental concerns by **applying** and **analyzing** the technical skills.	Ap, An	1,2,3,5,6,7,8,9	1,2,3

Scheme of Continuous Internal Evaluation (CIE):

Components	**Activity– I**	**Activity–II**	**Activity–III**	**Activity– IV**	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping (Planned)**		
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**	**PSO3**
1	✓	✓	✓		✓								✓	✓	
2	✓	✓	✓		✓								✓	✓	
3	✓	✓	✓		✓								✓	✓	
4	✓	✓	✓		✓	✓	✓	✓					✓	✓	✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

1. **Dr. Sharada M. Kori**

CULTURAL CLUB

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	To provide understanding of concepts of Cultural Events: Music, Dance, Public speech, Fine Arts, Literary Etc

Pre-requisites: Basic Knowledge of Cultural Events

Activity– I	**Contact Hours = 4 Hours**
Details of the Activity 1. Performing a group Song/Dance (Any song which includes beautiful chorus) 2. Performing on Theme based songs.	

Activity– II	**Contact Hours = 4 Hours**
Details of the Activity General Knowledge Quiz activity: Round 1: History and Geography, Round 2: Science and Technology Round 3: Literature and Arts, Round 4: Sports and Entertainment	

Activity– III	**Contact Hours = 4 Hours**
Details of the Activity **activities for a public speaking:** 1)Impromptu Speaking 2)Persuasive Speech	

Activity– IV	**Contact Hours = 4 Hours**
Details of the Activity: Fine Arts: Art and its application in the real world, Role of form in art, Principles of design in art **Aesthetics:** Aestheticism in art Understanding Indian aesthetics **History of Aestheticism and Art in India**	

Computer Graphics: Introduction to graphic software: Adobe Photoshop

Activity– V	**Contact Hours = 4 Hours**
Details of the Activity: Literary **Debate:** What is Debate Writing, Debate Writing: How to go about it, DO'S AND DONT'S Debate **EXTEMPORE** Writing Samples | Debate Writing Solved Examples. Why are they important? extempore? Extempore, Skills you need, How to succeed in extempore	

Course delivery methods		**Assessment methods**	
1.	PPT and Videos	1.	Activity presentation
2.	Activity	2.	Online Quizzes (Surprise and Scheduled)
2.	Demo/Training	3.	Seminar/Surveys/Assignments

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	Understand, and explore more about various aspects of Cultural events	Un	6	3
2	Apply the Knowledge gained and take it as career	Ap	10,12	3

Scheme of Continuous Internal Evaluation (CIE):

Components					Total Marks
Marks					100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping(Planned)**		
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO 11**	**PO 12**	**PSO1**	**PSO2**	**PSO3**
1						✓									✓
2										✓		✓			✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

UHV CELL

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	To provide understanding of basic human values
2.	To communicate about the need for education for life

Pre-requisites: English Language, Social Studies

Activity– I	**Contact Hours = 4 Hours**
Details of the Activity Paint your thoughts about UHV Based on the Lecture by Eminent personalities, students are asked either to Paint or Sketch and present their thoughts.	

Activity– II	**Contact Hours = 4 Hours**
Details of the Activity Group discussion One particular topic will be chosen for discussion, different groups of students are made and the discussion will be held.	

Activity– III	**Contact Hours = 4 Hours**
Details of the Activity Writing skit based on Scenario given. Based on visit, lecture and discussion, students will be asked to write a Skit/Report.	

Activity– IV	**Contact Hours =4 Hours**
Details of the Activity On particular topic students will be asked to search best video Content of the Best video will explored.	

Activity– V	**Contact Hours = 4 Hours**
Details of the Activity Sketch your thoughts about UHV Based on the Lecture by Eminent personalities, students are asked either to Sketch and present their	

thoughts.

Books	
	Text Books:
1.	Nagarazan R.S., Professional Ethics and Human Values, New Age International Publishers Pvt. Ltd. 2006
	Reference Books:
1.	P. R. Gaur, R. Sangal, G. P. Bagaria: A Foundation Course in Human Values and Professional ethics

Course delivery methods		Assessment methods	
1.	Paint /Sketch your thoughts about UHV	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	Identify and practice the human values	L2	6	3
2.	Understand the human values, work ethics, respect to theirs and stress management.	L1, L3	8	3

Scheme of Continuous Internal Evaluation (CIE):

Components					Total Marks
Marks					100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping(Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1						✓									✓
2								✓							✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

NATIONAL SERVICE SCHEME [NSS]

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Enrich the spirit of democratic living.
2.	Uphold the needs and values for selfless services
3.	Learn to appreciate other man's point of view
4.	Realize the welfare of individual dependence of the welfare of the society.

Pre-requisites: Rational Mind, heart of gold, hale hearty body and culturally sound.

Activity– I ENVIRONMENTAL ENRICHMENT & CONSERVATION	**Contact Hours =**

Details of the Activities:

6. Plantation of saplings [their preservation & upkeep/maintenance]
7. Environment awareness seminars and workshops [create consciousness]
8. Cleaning of villages/ neighborhood wells, ponds & lakes
9. Prevention of soil erosion [soil conservation]
10. Preservation of cultural heritage [protect & upkeep of monuments / create awareness]

Activity– II HEALTH, NUTRITION & FAMILY WELFARE PROGRAMS	**Contact Hours =**

Details of the Activities:

6. Health Education / Child development programs [primary health care]
7. Nutrition Programs [Medical college or home science]
8. Clean drinking water programs
9. Medico social Surveys [Cases of malaria, Covid, etc.]
10. Blood Donation camps

Activity– III SOCIAL SERVICE PROGRAMS	**Contact Hours =**

Details of the Activities:

5. Day camp at Hospital/ Old Age [cheer patients / old aged, hobby activity, etc.]
6. Work with NGOs of child welfare.
7. Work in institute for physically handicaps or orphanage
8. Cleaning of slums

Activity– IV WOMEN EMPOWERMENT PROGRAMS	Contact Hours =
Details of the Activities: 5. Educating women about their constitutional & legal rights [both literate & illiterate] 6. Women's contributions to economic & social well-being of the community programs 7. Awareness programs to show all occupations are open to them [Rural women] **8.** Training programs / workshops to rural, illiterate, unskilled, unemployed [Tailoring-sewing]	

Activity– V EMERGENCIES PROGRAMS / CALAMITIES	Contact Hours =
Details of the Activities: [Indian Red Cross Society Related Activities] 6. Assist Govt Depts/ NGOs in distribution of medicines, cloths, grocery, etc. 7. Help Health authorities in immunization & inoculation 8. Work with people in reconstruction [houses, roads, etc.] 9. Support the local authorities in rescue & relief work 10. Collection of cloths, food, etc send them to affected areas	

Books	
	Text Books:
1.	Name of the author(s), Title of the Book, Publisher, Edition/Year _____ and onwards
2.	VTU Handbook
	Reference Books:
1.	Name of the author(s), Title of the Book, Publisher, Edition/Year _____ and onwards
2.	
	E-resourses (NPTEL/SWAYAM.. Any Other)- mention links
1.	
2.	

Course delivery methods		Assessment methods	
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Activity Annual Report
4.	Training/workshops/seminars	4.	

Course Outcome (COs)

At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)

	Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create	**Learning Level**	**PO(s)**	**PSO(s)**
1.	Cater to develop the holistic and integrated persona	Un	6,7,8,9,10	3
2.	Grow passion and compassion for selfless community service	Un	6,7,8,9,10	3
3.	Connect the different peer groups.	Un	6,7,8,9,10	3
4.	Constitutes a bond of patriotism, national integration & communal harmony	Un	6,7,8,9,10	3

Scheme of Continuous Internal Evaluation (CIE):

Components	III sem	IV sem	V sem	VI sem	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping (Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1						✓	✓	✓	✓	✓					✓
2						✓	✓	✓	✓	✓					✓
3						✓	✓	✓	✓	✓					✓
4						✓	✓	✓	✓	✓					✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

IEEE STUDENT BRANCH

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives: Student should be able to	
1.	Inculcate ethics to be applied to interact with the professionals of the society.
2.	Design the awareness programs for less privileged school kids.
3.	Plan and execute programs for societal benefits for all age groups using technology.

Pre-requisites: None

Activity– I (School Outreach Program)	**Contact Hours = 4 Hours**
2-3 sessions in 2 days' time span. Arts and Crafts related activities for 1st to 4th standard, Awareness about Health, Hygiene and Environmental Science to 5th to 7th standard, Awareness towards Technology and Engineering to 8th to 10th standard students of a government school.	

Activity– II (Environmental Services Program)	**Contact Hours = 4 Hours**
At least 2 half a day sessions of plantation drive in association with NGO or Forest Department along with training on up-keeping of the plant. Regular observation and inspection of the growth of the plant for minimum 3 months post plantation.	

Activity– III (Science and Technology project model donation)	**Contact Hours = 4 Hours**
Effective and cheap science model development using latest technology and engineering to be donated to Pre-University, Diploma and ITI institutions. Simple Science project model demonstration and donation to government schools.	

Activity– IV (Design Thinking workshop)	**Contact Hours = 4 Hours**
Empathizing and Creating solutions for societal related issues after visiting government schools, rural schools, Old age homes, orphanages etc. Approaching NGO's and Social service foundations in the society to jointly conduct survey and use Design Thinking approach to devise product or process and a solution or an idea.	

Activity– V (Social Service using Technology/Engineering)	**Contact Hours = 4 Hours**
Identifying girl students, meritorious students from government schools in the area and locality and generate a database. Through the help of NGO's, approaching government establishments who can spread awareness of the various government schemes available in terms of scholarships and funding. For old age homes, orphanages using the same service approach to make government schemes reach the actual needy	

public of the society.

Books	
	Text Books:
1.	Product Design and Development by Ulrich, Karl T., Eppinger, Steve D. and Yang, Maria C.,7th ed., McGraw-Hill Education.
	Reference Books:
1.	Design: Creation of Artifacts in Society by Prof. Karl Ulrich, U. Penn
	E-resourses (NPTEL/SWAYAM.. Any Other)- mention links
1.	Product Engineering and Design Thinking By Prof. Pranab K Dan , Prof. Prabir Sarkar | IIT Kharagpur, IIT RoparLink: https://onlinecourses.nptel.ac.in/noc23_me52/preview

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments

Course Outcome (COs)

At the end of the course, the student will be able to(Highlight the **action verb** representing the learning level.)

Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	**Apply professionalism and ethics in effective communication with authorities.**	Ap	3,4,5,6,7,8,9,10,12	2,3
2.	**Apply the designed programs for societal benefits**	Ap	3,4,5,6,7,8,9,10,12	2,3
3.	**Analyze the effectiveness of the programs conducted on the society and target audience groups.**	An	3,4,5,6,7,8,9,10,12	2,3

Scheme of Continuous Internal Evaluation (CIE):

Components	Activity 1 and 2	Activity 3	Activity 4	Activity 5	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													CO-PSO Mapping (Planned)		
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
1			✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓
2			✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓
3			✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

Sl No	Skill & competence enhanced after undergoing the course	Applicable Industry Sectors & domains	Job roles students can take up after undergoing the course
1	Analytical Thinking	IT, Core	Engineering and Administrative
2	Team Building	IT, Core	Team Lead, Project Manager
3	Time Management, Long-Short Term Planning	IT, Core	Team Lead, Program Manager

PHOTOGRAPHY CLUB

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Learning the basic elements of photography.
2.	Enhance creative thinking ability to capture photos.
3.	Understanding the different types of photography.

Pre-requisites:

1. Basics of photography.
2. Creative thinking.

Activity–I: Basics of photography	**Contact Hours=04Hours**
Details of the Activity– 1. Session on basics of photography. 2. Learning and exploring the modern tools and accessories used in photography.	

Activity–II: Society photography	**Contact Hours=04Hours**
Details of the Activity– 1. Societal needs and Impact of photography on society 2. Promoting the local vendors.	

Activity–III: Village photography	**Contact Hours=04Hours**
Details of the Activity– 1. Exploring the beauty of our surroundings and people. 2. Encouraging people to plant saplings and avoid deforestation via photography.	

Activity–IV: Nature/ Festival photography	Contact Hours=04Hours
Details of the Activity– 1. Capturing creative and beautiful l pictures amidst the nature. 2. Show casing the variety and importance of our culture and traditions.	

Activity–V: Buildings and Architectures photography	Contact Hours=04Hours
Details of the Activity– 1. Capturing the highlights of ancient Indian architectures. 2. Exploring new concepts of photography.	

Books	
	Text Books:
1.	Sarvas, Risto, From Snapshots to Social Media - The Changing Picture of Domestic Photography, Springer London, 2011, XI, 199p
2.	Better Photography, Publication: Mumbai Network18 Media and Investments Ltd, 2013, 184p.
	Reference Books:
1.	Johnson, Charles S., Science for the curious photographer, Natick, Mass., A.K. Peters, 2010, x, 185 p.
	E-resources:
1.	https://alison.com/topic/learn/68316/introduction-to-digital-photography-learning-outcomes
2.	https://www.udemy.com/topic/photography/free/

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Activity presentation
2.	PPT and Videos	2.	Seminar/Field trip/Assignments
3.	Activity		
4.	Demo/Training		

Course Outcome (COs) At the end of the course, the student will be able to				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	**Understand** the basics of photography.	Un	12	2
2.	**Capture and experience** the photos of nature, culture, people of India to promote the diversity.	Ap	6, 8, 9	2
3.	Use and **apply** the knowledge of the modern gears and accessories used in photography.	Ap	5	2

Scheme of Continuous Internal Evaluation (CIE):

Components	Activity presentation	Seminar/ Field trip/ Assignments	Total Marks
Marks	50	50	100

CO-PO Mapping (Planned)													CO-PSO Mapping (Planned)		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO1 0**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1												✓		✓	
2						✓		✓	✓					✓	
3					✓									✓	
Tick mark the CO, PO and PSO mapping															

Prof. Tushar T. Hawal

Name & Signature of Faculty members
Involved in designing the syllabus

Name & Signature of Faculty members
verifying/approving the syllabus

RISE CLUB

Course Code	21AECEC75	Course type	AEC	Credits L-T-P	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			Total credits	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			CIE Marks	100
				SEE Marks	--

Course learning objectives	
1.	Leadership Skills: RISE aims to develop students' leadership abilities by providing opportunities to organize and lead club activities, manage projects, and collaborate with others.
2.	Personal Development: RISE may seek to help students enhance their personal development by encouraging self-reflection, self-awareness, and self-improvement.
3.	Networking and Social Skills: RISE could focus on fostering a strong sense of community and promoting networking among its members
4.	Cultural Awareness and Diversity: RISE may emphasize embracing and appreciating cultural diversity.

Pre-requisites:

Treasure Hunt	Contact Hours = 8 Hours
Details of the Activity A captivating treasure hunt event, where participants pay an entry fee that will be donated to an orphanage. This event exemplifies the values of philanthropy, community engagement, and compassion. By combining the excitement of a treasure hunt with the opportunity to contribute to a worthy cause, the event encourages participants to embrace the importance of giving back and supporting those in need. It instills a sense of empathy and highlights the power of collective action in making a positive impact on the lives of others.	

Free Vacation drive for pets	Contact Hours = 8 Hours
Details of the Activity A remarkable event aimed at providing free vaccinations to pets. This initiative embodies values of responsible pet ownership, animal welfare, and community service. By offering accessible and cost-free vaccinations, the event promotes the health and well-being of pets, ensuring they receive necessary protection against diseases. Additionally, it encourages pet owners to prioritize the care and safety of their furry companions, fostering a culture of responsible pet ownership.	

Plantation Drive	Contact Hours = 8 Hours
Details of the Activity An impactful plantation drive, exemplifying values of environmental stewardship, sustainability, and community engagement. This event aims to promote the importance of preserving and enhancing the natural environment by encouraging participants to plant trees and contribute to reforestation efforts. By actively engaging in this drive, the club fosters a sense of responsibility towards the planet, instilling values of conservation and a deeper understanding of the crucial role trees play in maintaining a healthy ecosystem.	

Blood Donation Drive	Contact Hours = 8 Hours
Details of the Activity a meaningful blood donation drive, embodying values of compassion, altruism, and community service. This event highlights the significance of donating blood to save lives and addresses the constant need for a steady blood supply in medical emergencies. By encouraging participants to donate blood, the club promotes a sense of empathy and care for others, inspiring individuals to contribute selflessly to the well-being of their community	

Talk on climate change	Contact Hours = 8 Hours
Details of the Activity an enlightening talk on climate change, showcasing values of environmental consciousness, education, and advocacy. This event aims to raise awareness about the urgent challenges posed by climate change and its impact on the planet. By hosting this talk, the club promotes a deeper understanding of the issue, encourages sustainable practices, and empowers individuals to take action in their daily lives.	

Books	
	Text Books:
1.	Name of the author(s), Title of the Book, Publisher, Edition/Year _____ and onwards
2.	
3.	
4.	
	Reference Books:
1.	Name of the author(s), Title of the Book, Publisher, Edition/Year _____ and onwards
2.	
	E-resourses (NPTEL/SWAYAM.. Any Other)- mention links
1.	
2.	

Course delivery methods	Assessment methods

1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	IA tests

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.				
2.				
3.				
4.				

Scheme of Continuous Internal Evaluation (CIE):

Components					Total Marks
Marks					100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping (Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1															
2															
3															
4															
5															
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty members verifying/approving the syllabus

ROTARACT CLUB OF GIT

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	To develop knowledge and understanding of the needs, problems and opportunities in the community and worldwide
2.	To provide opportunities for personal and group activities to serve the community and promote understanding and goodwill toward all people.
3.	To develop professional and leadership skills

Pre-requisites:

Activity– I Disease prevention and treatment	**Contact Hours = 4 Hours**
Session of Basic Life Support (BLS)- A session to orient students with the lifesaving skills of Cardiopulmonary restitution (CPR) in order to prevent Heart Attack disease followed by practical demonstration of CPR. Visit to schools/colleges/industry to spread awareness of BLS and help people around to handle such unfortunate situations.	

Activity– II Basic education and Literacy	**Contact Hours = 4 Hours**
Visit to Government schools adopted by the Rotary E Club of District 3170 Belgaum and other local Government schools to educate the students with the basics of Computers, soft skills, personal hygiene etc.	

Activity– III Professional Development	**Contact Hours = 4 Hours**
Professional Development activities – In-house quiz competitions, soft skills development sessions, etc. Tree plantation drives, blood donation drives	

Activity– IV Health awareness campaigns	**Contact Hours =4Hours**
Campaigns on Cancer awareness, diabetes etc. Community Service activities – visit to orphanage, old age homes to celebrate festivals and to do some donations.	

Activity– V Community service	**Contact Hours = 4 Hours**

Collection/ donation of blankets, clothes etc from individuals to be distributed to the needy (workers, homeless people)

Course delivery methods		Assessment methods	
1.	PPT and Videos	1.	Competition
2.	Activity	2.	Activity presentation
4.	Demo/Training	4.	Seminar/Surveys/Assignments

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	To **understand** the respect for the rights of others, based on recognition of the worth of each individual	L2	6,9,12	3
2.	To **apply** the idea of service above self	L3	6,9,12	3

Scheme of Continuous Internal Evaluation (CIE):

Components	Activity 1 (Attendance &Report)	Activity 2 (Attendance & Report)	Activity 3 (Attendance & Report)	Activity 4 (Attendance & Report)	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping (Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1						✓									✓
2									✓						✓
3												✓			✓
Tick mark the CO, PO and PSO mapping															

Prof. Prajakta Patil

Name & Signature of Faculty members members involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

SHAURYA CLUB

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Get Motivated to join the Indian Armed Forces and Law enforcement agencies
2.	Ready to attend competitive exams and SSB interviews
3.	Acquire leadership qualities and Effective Time Management
4.	Sense of responsibility towards Society and Country

Pre-requisites: Students should be ready to sacrifice some of the time and wishes to achieve targets on time.

Activity–Personal Security	**Contact Hours= 4Hours**
Self Defense Workshop Develop capacity to meet emergencies and natural disasters & practice national integration and social harmony. (Use of First Aid, emergency services)	

Activity–II (Personality Development 2)	**Contact Hours= 4Hours**
Develop leadership qualities (Extempore and Public Speaking) SSB Preparation (Mock SSB) Time Management Sports Activity	

Activity– III (Entice)	**Contact Hours= 4Hours**
Helping local schools to motivate and enlighten students for CDS and other competitive exams to opt for the career in security forces and law enforcement agencies. Educating them about Agniveer Scheme.	

Activity– IV (Inspire)	**Contact Hours= 4Hours**
Motivational talks by Eminent People who working/worked in Armed Forces and Law enforcement agencies	

Activity– V (Health and Awareness)	**Contact Hours = 4 Hours**

yoga/meditation workshop Spreading public awareness both for rural and urban population on Eco-friendly electrical appliances

Books	
	Text Books:
1.	Ravindra Dhankar, How to face the SSB Interview Successfully, Arihant Publications Pvt.Ltd.1st Edition/2008
2.	Dale Carniage, The Art of Public Speaking, Rupa Publications India, 2018
3.	Swami Vivekanand, Meditation and its methods, Grapevine India, 2018
	Reference Books:
1.	Prakash Iyer, The Secret of leadership, Penguin India ,2013
	E-resourses (NPTEL/SWAYAM.. Any Other)- mention links
1.	https://www.ssbcrack.com/2022/08/crack-ssb-interview-on-first-try.html

Course delivery methods		Assessment methods	
1.	Visits	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Seminar/Surveys/Assignments
4.	Demo/Training	4.	Report Preparation and Submission

Course Outcome (COs)

At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)

Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	Understand the importance of Defense Services and Law enforcement agencies towards Society	2	1,10	3
2.	Apply the leadership qualities and thinking ability to join Defense Services and Law enforcement agencies	3	9,10	3
3.	To understand the importance of health and maintain the same by meditation, yoga and sports	2	1,12	3

Scheme of Continuous Internal Evaluation (CIE):

Components	Report Submission	Presentation	Organization of event	Participation in Mock SSB	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													CO-PSO Mapping(Planned)		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO1 0**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1	✓									✓					✓
2									✓	✓					✓
3	✓											✓			✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members involved in designing the syllabus
Dr. Ganesh R. Chate

Name & Signature of Faculty members verifying/approving the syllabus
Dr. Vikas Ginigene

SPORTS

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Students will learn the skills , techniques and rules of the games
2.	It will help the students stay healthy and active

Pre-requisites:

Activity – I (Title)	**Contact Hours = Total 10 hrs 2 hrs / week Hours**
Details of the Activity 1) KABADDI A. Fundamental skills 1. Skills in Raiding: Touching with hands, Use of leg-toe touch, squat leg thrust, side kick, mule kick, arrow fly kick, crossing of baulk line. Crossing of Bonus line. 2. Skills of holding the raider: Various formations, catching from particular position, different catches, catching formation and techniques. 3. Additional skills in raiding: Escaping from various holds, techniques of escaping from chain formation, offense and defense. 4. Game practice with application of Rules and Regulations. B. Rules and their interpretations and duties of the officials. Speed Strength Endurance Agility Flexibility 2) Athletics:- Track Events 1.1. Starting Techniques: Standing start and Crouch start (its variations) use of Starting Block. 1.2. Acceleration with proper running techniques. 1.3. Finishing technique: Run Through, Forward Lunging and Shoulder Shrug.	

Activity– II (Title)	**Contact Hours = Total 10 hrs 2 hrs / week Hours**
Details of the Activity 1)Kho kho A. Fundamental skills 1. Skills in Chasing: Sit on the box (Parallel & Bullet toe method), Get up from	

the box (Proximal & Distal foot method), Give Kho (Simple, Early, Late & Judgment), Pole Turn, Pole Dive, Tapping, Hammering, Rectification of foul. 2. Skills in running: Chain Play, Ring play and Chain & Ring mixed play. 3. Game practice with application of Rules and Regulations. B. Rules and their interpretations and duties of the officials. 2)Athletics Track- 110 and 400 Mtrs Hurdles Jumps- Long jump, High jump Throws- Shot put, Discus Throw, Javelin Throw 110 Mtrs and 400Mtrs: Hurdling Technique: Lead leg Technique, Trail leg Technique, Side Hurdling, Over the Hurdles Crouch start (its variations) use of Starting Block. Approach to First Hurdles, In Between Hurdles, Last Hurdles to Finishing. Long Jump: High jump: Approach Run, Take-off, Bar Clearance (Straddle) and Landing. Shot Put: Discus Throw: Holding the Discus, Initial Stance Primary Swing, Turn, Release and Javelin Throw: Holding the javelin, Recovery (Rotation in the circle).

Activity– III (Title)	**Contact Hours = Total 10 hrs 2 hrs / week**
Details of the Activity 1)Volleyball A. Fundamental skills 1. Service: Under arm service, Side arm service, Tennis service, Floating service. 2. Pass: Under arm pass, Overhead pass. 3. Spiking and Blocking. 4. Game practice with application of Rules and Regulations B. Rules and their interpretation and duties of officials. 2)Throw ball A. Fundamental skills: Overhand service, Side arm service, two hand catching, one hand overhead return, side arm return. B. Rules and their interpretations and duties of officials	

Activity– IV (Title)	**Contact Hours = Total 10 hrs 2 hrs / week**
Details of the Activity 1) Football A. Fundamental Skills 1. Kicking: Kicking the ball with inside of the foot, Kicking the ball with Full Instep of the foot, Kicking the ball with Inner Instep of the foot, Kicking the ball with Outer Instep of the foot and Lofted Kick. 2. Trapping: Trapping- the Rolling ball, and the Bouncing ball with sole of the foot. 3. Dribbling: Dribbling the ball with Instep of the foot, Dribbling the ball with Inner	

and Outer Instep of the foot.
4. Heading: In standing, running and jumping condition.
5. Throw-in: Standing throw-in and Running throw-in.
6. Feinting: With the lower limb and upper part of the body.
7. Tackling: Simple Tackling, Slide Tackling.
8. Goal Keeping: Collection of Ball, Ball clearance- kicking, throwing and deflecting.
9. Game practice with application of Rules and Regulations.
B. Rules and their interpretation and duties of officials.

2) Table Tennis
A. Fundamental skills
1. Basic Knowledge: Various parts of the Racket and Grip (Shake Hand & Pen Hold Grip).
2. Stance: Alternate & Parallel.
3. Push and Service: Backhand & Forehand.
4. Chop: Backhand & Forehand.
5. Receive: Push and Chop with both Backhand & Forehand.
6. Game practice with application of Rules and Regulations.
B. Rules and their interpretations and duties of the officials

Activity– V (Title)	**Contact Hours = Total 10 hrs** **2 hrs / week Hours**

Details of the Activity
1)Basketball
A. Fundamental Skills
1. Passing: Two hand Chest Pass, Two hands Bounce Pass, One hand Baseball Pass, Side arm Pass, Overhead Pass, Hook Pass.
2. Receiving: Two hand receiving, One hand receiving, Receiving in stationary position, Receiving while Jumping and Receiving while Running.
3. Dribbling: How to start dribble, drop dribble, High Dribble, Low Dribble, Reverse Dribble, Rolling Dribble.
4. Shooting: Lay-up shot and its variations, One hand set shot, Two hands jump shot, Hook shot, Free Throw.
5. Rebounding: Defensive rebound and Offensive rebound.
6. Individual Defense: Guarding the player with the ball and without the ball, Pivoting.
7. Game practice with application of Rules and Regulations.
B. Rules and their interpretation and duties of officials

3) Handball
A. Fundamental Skills
1. Catching, Throwing and Ball control,
2. Goal Throws: Jump shot, Center shot, Dive shot, Reverse shot.
3. Dribbling: High and low.
4. Attack and counter attack, simple counter attack, counter attack from two wings and center.
5. Blocking, Goal Keeping and Defensive skills.
6. Game practice with application of Rules and Regulations.
B. Rules and their interpretation and duties of officials

Books	
	Text Books:
1.	Sports encyclopedia by om publications
	Reference Books:
1.	1. Saha, A. K. Sarir Siksher Ritiniti, Rana Publishing House, Kalyani. 2. Bandopadhyay, K. Sarir Siksha Parichay, Classic Publishers, Kolkata. 3. Petipus, et al. Athlete's Guide to Career Planning, Human Kinetics. 4. Dharma, P.N. Fundamentals of Track and Field, Khel Sahitya Kendra, New Delhi.

Course delivery methods		Assessment methods	
1.	Training & Demo	1.	Competition
2.	Practice	2.	

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	Apply physical skills to excel in sports events	Ap	6	3

Scheme of Continuous Internal Evaluation (CIE):

Components	Activity 1	Activity 2	Activity 3	Activity 4	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping(Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1						✓									✓
Tick mark the CO, PO and PSO mapping															

VAYUPUTRA CLUB

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Learn about the various types of Drones and its applications.
2.	Understand about the various components of drone design.
3.	Model a simple quad copter in CAD software.
4.	Able to fly the Rotary and fixed wing UAVss

Pre-requisites: Engineering Mechanics, Fundamentals of Flight

Activity– I	**Contact Hours = 04Hours**
Introduction, Types of Drones, Components of UAVs-Types of motors used for Drones.	

Activity– II	**Contact Hours = 05Hours**
Demonstration of Various Flight Control Systems	

Activity– III	**Contact Hours = Hours**
Fabrication of wings of an unmanned aerial vehicles using 3D printing/Hotwire cutting process.	

Activity– IV	**Contact Hours = Hours**
Hands on Training on Assembling and Manual Flying of UAV.	

Activity– V (Title)	**Contact Hours = Hours**
Hands on Training on Autonomous Flying of UAV.	

Books	
	Text Books:
1.	Yasmina Bestaoui Sebbane, “A First Course in Aerial robotics and Drones”, PHI, `1st edition, 2022, ISBN- 0367631385.
2.	David Mcgriffy, Make: Drones: Teach an Arduino to Fly, 1st edition,2016, ISBN-13:978-1680451715.
	Reference Books:
1.	E. Tooley, Practical Drones: Building, Programming, and Applications, Apress, 2021.
2.	S. K. Kopparthy, Drone Technology: Theory and Practice, Springer, 2020.

	E-resourses (NPTEL/SWAYAM.. Any Other)- mention links
1.	https://www.udemy.com/course/make_a_drone/: Make an Open Source Drone by Dr.Peter.

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	IA tests

Course Outcome (COs)

At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)

	Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create	**Learning Level**	**PO(s)**	**PSO(s)**
1.	Apply fundamental engineering knowledge to Identify the UAS technology's systems and component parts.	Ap	1,2, 5	1,2
2.	Select the Suitable flight controller and important components for the required Task.	An	1, 2, 3, 5, 8, 9, 10, 12	1,2
3.	Develop innovative design and collaboration skills as they plan and execute UAV missions, analyze data for the desired mission.	Ap	1, 2, 3, 5, 8, 9, 10, 12	1, 2, 3

Scheme of Continuous Internal Evaluation (CIE):

Components					Total Marks
Marks					100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping (Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1	✓	✓			✓								✓	✓	
2	✓	✓	✓		✓			✓	✓	✓		✓	✓	✓	
3	✓	✓	✓		✓			✓	✓	✓		✓	✓	✓	✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members
Involved in designing the syllabus

Name & Signature of Faculty
members
verifying/approving the syllabus

IEI(ELECTRICAL)

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Explain about IEI student chapter.
2.	Understand and apply LED bulb refurbishing.
3.	Understand the energy conservation and rural development concept.
4.	Analyze the technical aspect during industry visit.

Pre-requisites:

Activity– I (Title)	**Contact Hours = 4 Hours**
Brief Introduction to IEI and guest lectures.	

Activity– II (Title)	**Contact Hours = 4 Hours**
Refurbishing of fused out LED bulbs	

Activity– III (Title)	**Contact Hours = 4 Hours**
Awareness of Energy conservation to school students	

Activity– IV (Title)	**Contact Hours = 4 Hours**
Rural development themed model making	

Activity– V (Title)	**Contact Hours = 4 Hours**
Site visit to nearby industries.	

Books	
	Text Books:
1.	S.L. Uppal “Electrical Power” Khanna Publishers.
	Reference Books:
1.	**“BIS, IEC Standards for Lamps, Lighting Fixtures and Lighting”,** Manak Bhavan, New Delhi.
	E-resources (NPTEL/SWAYAM.. Any Other)- mention links
1.	

Course delivery methods		**Assessment methods**	
1.	Chalk and Talk	1.	Competition

2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	IA tests

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	Explain about IEI student chapter.	Un	1,2	3
2.	Explain and apply LED bulb refurbishing.	App	2,4,12	3
3.	Explain the energy conservation and rural development concept.	App	2,4,12	3
4.	Analyze the technical aspect during industry visit.	App	2,4,12	3

Scheme of Continuous Internal Evaluation (CIE):

Components					Total Marks
Marks					100
Minimum score to pass the course: 40 OUT OF 100					

Rubrics: Levels	**Target**
1(Low)	**60% of the students score Less than 50 % of the total marks.**
2(Medium)	**60% of the students score 50 – 70 % of the total marks.**
3(High)	**60% of the students score More than 70 % of the total marks.**

CO-PO Mapping (Planned)													**CO-PSO Mapping(Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1	✓	✓													✓
2		✓		✓								✓			✓
3		✓		✓								✓			✓
4		✓		✓								✓			✓
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members members involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

NANO CLUB

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	To understand the principles of nano-science engineering, carbon nanotubes and their applications.
2.	To understand the effects of size of nano-materials on various applications.
3.	To study the fabrication techniques of nano particles.
4.	To identify the properties of nanoparticles and their usage in various applications.

Pre-requisites: Basic physics and chemistry

Activity – I Introduction to Nanotechnology	**Contact Hours = 2 Hours**
A talk with demonstration to create awareness about nanotechnology and its applications in various fields.	

Activity – II Awareness Programme on Nano Technology for school students.	**Contact Hours = 2 Hours**
The members of Nano Club will visit a school and illustrate the applications of Nano Technology in various fields.	

Activity – III Student Development Programme for Polytechnic Students	**Contact Hours = 2 Hours**
The members of Nano Club will visit a Polytechnic college and illustrate the emerging applications of Nano Technology and Nano Science in various fields of engineering.	

Activity – IV The skill of writing technical articles related to Nano technology and Nano Science	**Contact Hours = 2 Hours**
A session on the methodology to study and write technical articles related to Nano Technology, Nano Science and its applications.	

Activity – V Synthesis of Nano particles and analysis of Ayurvedic mixtures	**Contact Hours = 2 Hours**

The process of synthesizing Nano particles will be demonstrated and the Nano Properties of various Ayurvedic Bhasmas used in medication will be analyzed.

Books	
	Text Books:
1.	Robert Kelsall, Ian Hamley, Mark Geoghegan, —Nanoscale Science and Technology, John Wiley, 2007.
2.	Charles P Poole, Jr, Frank J Owens, —Introduction to Nanotechnology, John Wiley, Copyright 2006, Reprint 2011.
3.	T Pradeep, —Nano: The Essentials-Understanding Nanoscience and Nanotechnology, TMH.
4.	**Reference Books:**
	William A Goddard III, Donald W Brenner, Sergey E. Lyshevski, Gerald J Iafrate, —Hand Book of Nanoscience Engineering and Technology‖, CRC press, 2003.
1.	**E-resourses (NPTEL/SWAYAM.. Any Other)- mention links**
2.	Fundamentals of micro and nanofabrication By Prof. Shankar Selvaraja, Prof. Sushobhan Avasthi, IISc Bangalore https://onlinecourses.nptel.ac.in/noc20_bt37/preview

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	IA tests

Course Outcome (COs)

At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level)

Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	Understand the principles of Nano-electronics, properties of Nano-particles and carbon nanotubes	Un	1,9,10,12	1
2.	Apply concepts of nano-electronics in various fields	Ap	1,2,6,9,10,12	1,2
3.	Understand the fabrication techniques and the process flow for sensor design.	Un, An	1,2,8,9,10,12	1,3

Scheme of Continuous Internal Evaluation (CIE):

Components	Quiz (Activity 1, Activity 2 and Activity 3)	Report (Activity 4 and Activity 5)	Total Marks
Marks	20 + 20 + 20 = 60	20 + 20 = 40	100
Minimum score to pass the course: 40 OUT OF 100			

CO-PO Mapping (Planned)													CO-PSO Mapping (Planned)		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1	✓								✓	✓		✓	✓		
2	✓	✓				✓			✓	✓		✓	✓	✓	
3	✓	✓						✓	✓	✓		✓	✓		✓
Tick mark the CO, PO and PSO mapping															

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CODECHEF

Course Code	**21AECEC75**	**Course type**	**AEC**	**Credits L-T-P**	0 – 0 – 1
Hours/week: L-T-P	0 – 0 – 2			**Total credits**	1
Total Contact Hours	L = 0Hrs; T = 0Hrs; P = 2Hrs Total = 20Hrs			**CIE Marks**	100
				SEE Marks	--

Course learning objectives	
1.	Understand the fundamental concepts and principles of Data Structures and Algorithms (DSA), including data types, data structures, algorithms, and their analysis.
2.	Develop an understanding of the job market and industry requirements: Gain knowledge about the current trends, demands, and expectations of employers in the relevant industry or field of study.
3.	Understand the concept of open-source: Gain a comprehensive understanding of the open-source philosophy, including the principles of transparency, collaboration, and free sharing of source code and resources.
4.	Imparting Industrial exposure and enhancing start-up culture among students

Pre-requisites: nil

Strengthen the DSA skills in students	**Contact Hours = 05 Hours**
Activity 1: 3 days Data Structures and Advanced Algorithms Bootcamp Activity 2: Coding Contest on DSA	

Placement activities	**Contact Hours = 05 Hours**
Activity 1: Placement Preparation - Mock placement sessions that Include Resume Writing Session + Group Discussion and interviews Activity 2: Web development/ App development bootcamp + contest/Hackathon	

Awareness about Open-source	**Contact Hours = 05 Hours**
Activity 1: Session on Git, GitHub and Open-Source Contributions Activity 2: Contest on Open-Source Contributions	

Industrial exposure and enhancing start-up culture	**Contact Hours = 05 Hours**
Activity 1: Industrial visit/ Industrial Internship program Activity 2: Startup Awareness and Pitch session in collaboration with incubators & entrepreneurs	

Books	
	Text Books:
1.	Name of the author(s), Title of the Book, Publisher, Edition/Year _____ and onwards

	Reference Books:
1.	Name of the author(s), Title of the Book, Publisher, Edition/Year _____ and onwards

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Competition
2.	PPT and Videos	2.	Activity presentation
3.	Activity	3.	Online Quizzes (Surprise and Scheduled)
4.	Demo/Training	4.	Seminar/Surveys/Assignments
		5.	IA tests

Course Outcome (COs) At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)				
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**	**PSO(s)**
1.	**Understand, Analyze and apply** the latest advancements, trends, and concepts in their specific technical domain.	L3	9, 10, 12	1, 3
2.	Effectively **communicate** their ideas, collaborate with others, and articulate their **understanding** of the technical concepts presented.	L5	1, 2, 3 ,4, 6, 8, 12	1, 2, 3
3.	Allows the concrete **deployment** of new ideas to be organized	L3	1, 2, 3, 12	1, 3
4.	**Enhancement** of professional and technical skills of the students	L4	1,2,3,5,9,10, 12	1, 3

Scheme of Continuous Internal Evaluation (CIE):

Components	**Activity– I**	**Activity–II**	**Activity–III**	**Activity– IV**	Total Marks
Marks	25	25	25	25	100
Minimum score to pass the course: 40 OUT OF 100					

CO-PO Mapping (Planned)													**CO-PSO Mapping (Planned)**		
CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO1 0**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
1									✓	✓		✓	✓		✓
2	✓	✓	✓	✓		✓		✓				✓	✓	✓	✓
3	✓	✓	✓									✓	✓		✓
4										✓		✓	✓		✓
Tick mark the CO, PO and PSO mapping															

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