DHANALAKSHMI SRINIVASAN ENGINEERING COLLEGE

(An Autonomous Institution, Affiliated to Anna University, Chennai)

Re-accredited with 'A' Grade by NAAC, Accredited by TCS Accredited by NBA (AERO, BME, CSE, ECE, EEE, IT & MECH)

PERAMBALUR – 621212

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REGULATIONS – 2023

Skill Development Course

CURRICULA AND SYLLABI

(Applicable to the students admitted from the Academic year 2023 – 2024 onwards)

SKILL DEVELOPMENT COURSE

INDEX

OVERVIEW-SKILL DEVELOPMENT COURSE

As an Autonomous Institution, the Institute is empowered to design and implement its own Regulations, Curriculum, and Syllabi in alignment with the guidelines of the parent university and statutory bodies. In this regard, the Institution has introduced a structured framework of **Skill Development Courses (SDCs)** to complement the academic curriculum and to address the evolving needs of the industry.

The Skill Development Courses consist of **mandatory courses, value-added activities, and skill-oriented training programs**, which are systematically offered across all semesters. These courses are designed to ensure the **holistic development of students**, focusing on technical competence, communication skills, physical fitness, ethical values, and employability.

The primary objective of these courses is to transform students into **industry-ready professionals, competent engineers, and responsible citizens**. The curriculum integrates multiple domains such as health and wellness, service to society, technical expertise, and employability skills, thereby providing a balanced and comprehensive learning experience.

The **All India Council for Technical Education (AICTE)**, through its Model Curriculum (2018), has restructured engineering education to meet dynamic industry requirements. As per these guidelines, the total credit requirement for undergraduate engineering programs has been reduced from 220 to 160 credits, with a greater emphasis on flexibility and **Outcome-Based Education (OBE)**.

In line with AICTE recommendations, institutions are encouraged to offer **mandatory non-credit courses and activities** that promote **skill-based and experiential learning**. This approach enables students to gain practical knowledge, industry exposure, and essential life skills beyond the conventional classroom environment.

Adopting the principles of Outcome-Based Education and Skill-Based Learning, the Institution has incorporated Skill Development Courses as an integral component of **Regulation 2023**. These courses aim to:

- Enhance technical and professional competencies
- Improve communication and interpersonal skills
- Promote innovation, creativity, and problem-solving abilities
- Strengthen Industry–Institute interaction
- Develop ethical values and social responsibility

Through this initiative, the Institution strives to bridge the gap between academic learning and industrial expectations, thereby producing graduates who are not only academically proficient but also **industry-ready and globally competent**.

The Skill Development Courses offered by the Institution are categorized into the following seven groups:

Group	Category
G1	Health & Fitness
G2	Service to Society
G3	Skill Course
G4	Social Course
G5	Technical Expertise
G6	Employability Course
G7	Proficiency Exam

The Skill Development Courses are categorized into seven groups, each focusing on a specific area of student development. These groups are designed to enhance the physical, social, technical, and professional skills of students.

Group Categories

G1 – Health & Fitness

This group focuses on improving the physical health and overall well-being of students. It encourages students to maintain a healthy lifestyle through activities related to fitness, wellness, and personal health.

G2 – Service to Society

This group aims to develop a sense of social responsibility among students. It promotes activities that encourage service to the community and foster values such as unity, sharing, and social awareness.

G3 – Skill Course

This group provides essential skill-based training such as computing skills, language proficiency, and other practical abilities that help students actively participate in academic and professional environments.

G4 – Social Course

This group helps students understand the functioning of society, including aspects related to government, economics, civics, and social relationships.

G5 – Technical Expertise

This group focuses on developing technical and professional capabilities. It helps students acquire knowledge and skills required for designing, developing, and implementing technical solutions.

G6 – Employability Course

This group aims to improve students' career readiness by developing employability skills such as communication, aptitude, interview preparation, and professional development.

G7 – Proficiency Examination

This group evaluates students' knowledge and skills in their respective programs through various proficiency tests and certification examinations.

Outcome:

On successful completion of the module, student will be to acquire the following skill

I Year	Fitness and Societal Skill
II Year	Domain Specific and Social Skill
III year	Technical and Pre Placement Skill
IV Year	Employability and Higher Education

GUIDELINES

The Skill Development Course is offered to our students as per the DSEC Regulations 2020. The Skill Development Course is offered with 12 Groups for developing the student skills in diverse fields and to evoke themselves as professionals.

12 GROUPS UNDER SEVEN CATEGORIES							
G1	Health & Fitness	**G2**	Service to Society Level 1	**G3**	Skill Course Level 1	**G4**	Social Course
G5	Technical Expertise Level 1	**G6**	Employability Course Level 1	**G7**	Skill Course Level 2	**G8**	Employability Course Level 2
G9	Technical Expertise Level 2	**G10**	Proficiency Exam	**G11**	Service to Society Level 2	**G12**	Employability Course Level 3

As each group comprises of seven modules and in each semester, 2 groups are offered to the students. These Groups are disseminated in a way that every student will be skilled from all seven categories.

The offered Group split up for every semester is mentioned as below:

OFFERED GROUP IN EACH SEMESTER								
Semester	**I**	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**
Group Offered	G1	G3	G4	G6	G7	G9	G10	G12
	G2	G1	G5	G4	G8	G7	G11	G10

The students can enroll any one of the modules (considering 2 Groups) every semester.

Curriculum and Syllabi framing for offered modules:

The modules are classified as Theory based / Practical Based / Events Based activities. The syllabus is framed by referring AICTE Model Curriculum. For certificate courses, categorize as circuit and non-circuit branches and modalities has to be frame.

The modalities for outdoor activities are listed if the methodology of the module is outdoor. Evaluation strategy is proposed in the syllabus of each module.

Credit details:

For the award of degree, every student has to complete atleast one module in each group.

Programmes	**Under Graduate (B.E/ B.Tech)**			
Year	I	II	III	IV
Number of Modules	2	2	2	2
Credit Details of module	1	2	2	1
Total Credits :12	2	4	4	2

CURRICULUM

Expanded Group Category:

As mentioned in the guidelines, the disseminated Group details are given along with the respective Group number.

Health & Fitness (G1)	Service to Society (G2,G11)	Skill Course (G3,G7)	Social Course (G4)
Technical Expertise (G5,G9)	Employability Course (G6,G8,G12)	Proficiency Exam (G10)	

Semester wise Details:

Semester	Module 1 (Group)	Module 2 (Group)	Focus Area
I	Health & Fitness (G1)	Service to Society (G2)	Physical wellness and social responsibility
II	Health & Fitness (G1)	Skill Course (G3)	Healthy lifestyle and basic skill development
III	Social Course (G4)	Technical Expertise (G5)	Understanding society and developing technical knowledge
IV	Social Course (G4)	Employability Course (G6)	Social awareness and career preparation
V	Skill Course (G7)	Employability Course (G8)	Advanced skills and professional development
VI	Skill Course (G7)	Technical Expertise (G9)	Practical skill training and technical expertise
VII	Service to Society (G11)	Proficiency Examination (G10)	Community engagement and professional assessment
VIII	Employability Course (G12)	Proficiency Examination (G10)	Career readiness and evaluation of competencies

The offered Group under each semester is stipulated as follow,

Semester	Health & Fitness (G1)	Service to Society (G2,G11)	Skill Course (G3,G7)	Social Course (G4)	Technical Expertise (G5,G9)	Employability Course (G6,G8,G12)	Proficiency Exam (G10)
I	* (G1)	* (G2)					
II	* (G1)		* (G3)				
III				* (G4)	* (G5)		
IV				* (G4)		* (G6)	
V			* (G7)			* (G8)	
VI			* (G7)		* (G9)		
VII		* (G11)					* (G10)
VIII						* (G12)	* (G10)

Module Details:

The offered module under each Group with their Module code,

S.No	Academic Year	Skill Development Course	Course Code	Course Content
1	2023–2024 (ODD)	Professional Communication Skills	UES11	Develops effective communication skills including presentation skills, professional writing, public speaking, and workplace communication.
		Resume Building & Interview Skills	UTE01	Guides students in preparing professional resumes, cover letters, and improves interview performance through mock interview sessions.
		Website Development	USC11	Introduces basic web development concepts including HTML, CSS, and JavaScript for designing responsive websites.
		NPTEL Course	—	Students complete online certification courses through NPTEL to enhance technical knowledge and domain expertise.
2	2023–2024 (EVEN)	Project Management	UES04	Provides knowledge of project planning, scheduling, risk management, and execution using standard project management methodologies.
		Workshop / Smart India Hackathon	USC09	Encourages innovation and teamwork through participation in hackathons and technical

				workshops to solve real-world problems.
		Self-Learning Course	UTE10	Promotes independent learning through online platforms to explore emerging technologies and improve technical skills.
		NPTEL Course	—	Students pursue online certification courses from NPTEL to gain additional technical knowledge.
3	2024–2025 (ODD)	Technical Symposium Participation	USC13	Students present papers, posters, and projects in technical symposiums to improve research and presentation skills.
		Professional Society Membership Activities	USC12	Encourages participation in professional bodies such as IEEE, CSI, and ISTE for knowledge sharing and networking.
		Continuing Education Programme	USS09	Students attend seminars, workshops, and guest lectures conducted by industry experts for continuous learning.
		NPTEL Course	—	Online certification programme to strengthen domain knowledge and professional skills.
4	2024–2025 (EVEN)	Aptitude Proficiency Certification	UPE06	Develops problem-solving, quantitative aptitude, logical reasoning, and analytical thinking for competitive examinations.
		NPTEL Course	UES21	Students complete advanced online certification courses relevant to their discipline through NPTEL.
5	2025–2026 (ODD)	Clearing Proficiency Exam (GATE / Tech Exam)	UPE01	Provides training and preparation strategies for competitive exams such as GATE and other technical examinations.
		Guidance to School Education	USS08	Students contribute to community service by guiding school students in academic subjects and career awareness programmes.
		Career Development Programme	USS10	Focuses on career planning, professional growth, and awareness of employment opportunities in various sectors.
		NPTEL Course	—	Students complete NPTEL online courses to improve domain knowledge and employability skills.
6	2025–2026 (EVEN)	DevOps and Digital Marketing	UTE11	Introduces DevOps practices, cloud deployment concepts, CI/CD tools, and digital marketing strategies used in modern industries.
		Quantum Computing	U23CSV64	Provides an introduction to quantum computing principles, quantum algorithms, and future computing technologies.

SYLLABUS

Academic Years: 2023–2026

The Department of Computer Science and Engineering offers Skill Development Courses to enhance students' technical knowledge, professional communication, and employability skills.

1. **Professional Communication Skills**

Parameter	Details
Course Code	UES11
Credits (L T P C)	1 0 0 1
Objective	• To develop effective verbal and written communication skills • To enhance confidence in presentations and discussions • To prepare students for workplace communication
Course Description	This course focuses on developing communication skills required in academic and professional environments. It covers verbal, non-verbal, and written communication along with practical exposure through presentations and discussions.
Expected Outcomes	• Communicate effectively in professional environments • Deliver confident presentations • Participate actively in group discussions
Teaching Methodology – Indoor	• Guest lectures • Video lectures • Group discussion practice
Teaching Methodology – Outdoor	• Communication workshops • Personality development programs • Seminar participation
Syllabus / Components	**Unit I:** Fundamentals of Communication – Types, barriers, listening skills **Unit II:** Professional Communication – Presentation, GD, interview skills, body language
Practical Activities	• Group discussions on current topics • Mock presentations (PPT)
Tools / Resources	• PowerPoint / Google Slides • Communication videos
Assessment & Evaluation – Indoor	• Attendance • Group discussion performance • Presentation evaluation

2. Resume Building and Interview Skills

Parameter	Details
Course Code	UTE01
Credits (L T P C)	1 0 0 1
Objective	• To enable students to prepare industry-standard resumes • To develop confidence in facing interviews • To enhance employability and professional behaviour
Course Description	This course is designed to prepare students for placement and career opportunities by focusing on resume writing, interview techniques, and professional etiquette. It provides hands-on training through mock interviews, workshops, and interaction with industry experts.
Expected Outcomes	• Prepare professional resumes • Face technical and HR interviews confidently • Improve professional etiquette • Demonstrate effective self-presentation skills • Develop problem-solving and communication abilities
Teaching Methodology – Indoor	• HR guest lectures • Mock interview sessions • Group discussion practice • Video-based interview training
Teaching Methodology – Outdoor	• Placement training programs • Industry interaction sessions • Alumni interaction programs
Syllabus / Components	**Unit I:** Resume Building – Resume formats, cover letter writing, digital profiles **Unit II:** Interview Skills – Technical interviews, HR interviews, behavioral questions **Unit III:** Group Discussion & Communication – GD techniques, listening skills, presentation **Unit IV:** Professional Etiquette – Dress code, workplace behavior, time management
Practical Activities	• Resume drafting and peer review • Mock interviews (technical & HR) • Group discussion sessions • Role-play activities (HR scenarios) • Elevator pitch practice
Tools / Resources	• Resume templates (Word/Canva) • Online interview platforms (Zoom/Meet) • Video recording tools for self-evaluation • Aptitude and interview preparation portals
Assessment & Evaluation – Indoor	• Resume submission and evaluation • Mock interview performance • Group discussion assessment • Attendance
Assessment & Evaluation – Outdoor	• Participation certificate • Interview preparation report • Feedback from industry trainers • Placement readiness evaluation

3. Website Development

Parameter	Details
Course Code	USC11
Credits (L T P C)	1 0 0 1
Objective	• To introduce students to modern web development technologies • To enable students to design and develop responsive websites • To build foundational skills in front-end development
Course Description	This course focuses on the fundamentals of web development, including HTML, CSS, and JavaScript. Students gain hands-on experience in designing responsive web pages and deploying simple websites. The course emphasizes practical learning through coding exercises and mini projects.
Expected Outcomes	• Design basic websites • Understand web technologies • Create responsive pages • Develop interactive web interfaces • Apply front-end development concepts effectively
Teaching Methodology – Indoor	• Coding demonstrations • HTML, CSS, JavaScript practice sessions • Debugging and code review sessions
Teaching Methodology – Outdoor	• Coding boot camps • Hackathons / coding competitions • Industry expert sessions
Syllabus / Components	**Unit I:** HTML & Web Basics – Structure of web pages, tags, forms, multimedia **Unit II:** CSS & Responsive Design – Styling, layouts, Flexbox/Grid, media queries **Unit III:** JavaScript Fundamentals – Variables, functions, DOM manipulation **Unit IV:** Website Deployment – Hosting basics, GitHub pages, domain concepts
Practical Activities	• Designing static web pages • Creating responsive layouts • JavaScript-based interactive elements • Mini project: Personal/portfolio website
Tools / Resources	• Browser developer tools
Assessment & Evaluation – Indoor	• Attendance
Assessment & Evaluation – Outdoor	• Workshop participation certificate • Mini project submission

4. Project Management

Parameter	Details
Course Code	UES04
Credits (L T P C)	1 0 0 1
Objective	• To provide knowledge of project planning and execution • To develop skills in managing resources, time, and cost • To introduce risk management and project documentation practices
Course Description	This course introduces students to the principles and practices of project management in engineering and IT domains. It covers the project life cycle, planning techniques, scheduling, risk analysis, and documentation. Students gain practical exposure through case studies and project-based activities.
Expected Outcomes	• Understand project lifecycle • Plan technical projects • Manage risks and resources • Apply project management tools and techniques • Develop teamwork and leadership skills
Teaching Methodology – Indoor	• Guest lectures • Case study discussions • Project planning activities • Presentation sessions
Teaching Methodology – Outdoor	• Industrial visits • Industry interaction sessions • Project exhibitions
Syllabus / Components	**Unit I:** Introduction to Project Management – Concepts, lifecycle, roles **Unit II:** Project Planning – Scope, scheduling (Gantt charts), resource allocation **Unit III:** Risk Management – Risk identification, analysis, mitigation strategies **Unit IV:** Project Monitoring & Documentation – Tracking, reporting, documentation standards
Practical Activities	• Preparation of project proposals • Team-based mini project planning
Tools / Resources	• Project management tools (MS Project / Trello) • Documentation templates • Case study materials
Assessment & Evaluation – Indoor	• Assignment submission • Case study analysis • Project planning report • Attendance
Assessment & Evaluation – Outdoor	• Industrial visit participation • Project report submission • Industry feedback (if applicable)

5. Smart India Hackathon / Technical Workshop

Parameter	Details
Course Code	USC09
Credits (L T P C)	1 0 0 1
Objective	• To encourage innovation and creative thinking • To develop problem-solving skills using technology • To promote teamwork and collaborative learning
Course Description	This course provides a platform for students to identify real-world problems and develop innovative technological solutions. It includes participation in hackathons, technical workshops, and idea development sessions, enabling students to apply theoretical knowledge to practical challenges.
Expected Outcomes	• Identify real-world problems • Develop innovative solutions • Improve teamwork skills • Enhance technical and analytical thinking • Build prototypes and present solutions effectively
Teaching Methodology – Indoor	• Technical seminars • Idea development sessions
Teaching Methodology – Outdoor	• Hackathon participation • Technical workshops
Syllabus / Components	**Unit I:** Problem Identification – Understanding real-world challenges, domain selection **Unit II:** Idea Generation – Brainstorming, design thinking, feasibility analysis **Unit III:** Solution Development – Prototyping, coding, testing **Unit IV:** Presentation & Evaluation – Pitching ideas, documentation, demonstration
Practical Activities	• Problem statement analysis • Idea pitching sessions • Prototype/model development • Team-based project work • Final project presentation/demo
Tools / Resources	• Programming tools and IDEs • Prototyping tools (Figma, Canva, etc.) • Collaboration tools (GitHub) • Online hackathon platforms
Assessment & Evaluation – Indoor	• Idea presentation • Technical proposal submission • Attendance
Assessment & Evaluation – Outdoor	• Hackathon participation certificate • Prototype demonstration • Performance in competitions

6. DevOps and Digital Marketing

Parameter	Details
Course Code	UTE11
Credits (L T P C)	1 0 0 1
Objective	• To introduce basic DevOps practices through hands-on training • To provide practical exposure to digital marketing concepts
Course Description	This course was conducted as a hands-on training session to provide students with practical exposure to DevOps fundamentals and digital marketing techniques. Students performed basic tasks related to version control and online marketing.
Expected Outcomes	• Understand basic DevOps workflows • Gain exposure to digital marketing strategies • Perform simple practical tasks using tools
Teaching Methodology – Indoor	• Hands-on training sessions • Live demonstrations • Guided practice
Content Covered	• Introduction to DevOps • Basic Git operations • Overview of CI/CD • Introduction to digital marketing and social media
Practical Activities	• Basic Git practice • Simple task execution • Social media content planning activity
Tools / Resources	• GitHub (basic use) • Browser-based tools • Social media platforms
Assessment & Evaluation – Indoor	• Attendance • Participation in hands-on session

7. Quantum Computing

Parameter	Details
Course Code	U23CSV64
Credits (L T P C)	1 0 0 1
Objective	• To introduce the fundamentals of quantum computing • To create awareness about emerging computing technologies
Course Description	This seminar provides an overview of quantum computing concepts including qubits, superposition, and quantum algorithms. It helps students understand future trends in computing through expert interaction.
Expected Outcomes	• Understand basic quantum computing concepts • Gain awareness of qubits and quantum algorithms • Explore future computing technologies
Teaching Methodology – Indoor	• Expert lecture (offline seminar) • Presentation sessions • Interactive discussion
Content Covered	• Introduction to quantum computing • Qubits and superposition • Basic quantum algorithms • Applications and future scope
Assessment & Evaluation – Indoor	• Attendance • Participation in discussion • Feedback collection