

K.S.R. COLLEGE OF ENGINEERING: TIRUCHENGODE - 637 215
(Autonomous)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
B.E. COMPUTER SCIENCE AND DESIGN
(REGULATIONS 2020)

Vision of the Institution

IV We envision to achieve status as an excellent Educational Institution in the global knowledge hub, making self-learners, experts, ethical and responsible engineers, technologists, scientists, managers, administrators and entrepreneurs who will significantly contribute to research and environment friendly sustainable growth of the nation and the world.

Mission of the Institution

IM 1 To inculcate in the students self-learning abilities that enable them to become competitive and considerate engineers, technologists, scientists, managers, administrators and entrepreneurs by diligently imparting the best of education, nurturing environmental and social needs.

IM 2 To foster and maintain mutually beneficial partnership with global industries and Institutions through knowledge sharing, collaborative research and innovation.

Vision of the Department / Programme: (Computer Science and Design)

DV To produce professionals for designing technology with ethical values, ingenious attitude and team spirit required for the continual development of the society and the nation.

Mission of the Department / Programme: (Computer Science and Design)

DM 1 To bestow academic environment for the development of skilled professionals qualified with knowledge, skills, values, and ethics, thereby take a role in the field of computer science and design.

DM 2 Imbibing holistic, creative learning and ethical attitude for embracing global challenges and leadership qualities in the field of computer science and design.

DM 3 To influence graduates with the skills to become self-employed entrepreneurs and future leaders.

Programme Educational Objectives (PEOs): (Computer Science and Design)

The graduates of the programme will be able to


PEO 1 Techno Commercial Engineer: To develop the ability to think critically, analyse and make innovative design for offering techno-commercially feasible solutions.

PEO 2 Governance of Super Intelligence: To apply current tools and technologies to contribute for industries, public sectors, research organization for solving time critical problems.

PEO 3 Enduring Exploration: To impart the knowledge of inventive design skills and lifelong learning to succeed in their professional challenges.


Programme Outcomes (POs) of B.E. - Computer Science and Design

Program Outcomes (POs)	
PO1	Engineering Graduates will be able to: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	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.
PO6	The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	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.
PO11	Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
Program Specific Outcomes (PSOs)	
PSO1	Career through professional: Acquire knowledge in several areas of Computer Science and Design to promote skills necessary for a profession, entrepreneurship and higher education.
PSO2	Software design and development: Ability to use appropriate tools and platforms successfully, as well as improve them, to produce applications/products for new media design in areas likes multimedia, animation, virtual reality and gaming.


		K.S.R. COLLEGE OF ENGINEERING (Autonomous) (Approved by AICTE & Affiliated to Anna University) K.S.R. Kalvi Nagar, Tiruchengode- 637 215						CURRICULUM UG R - 2020		
Department		Department of Computer Science and Engineering								
Programme		B.E - Computer Science and Design								
SEMESTER – I										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P		C	CA	ES
THEORY										
1.	20EN151	Technical English – I (Common To All Branches)	HSMC	2	0	1	3	40	60	100
2.	20MA151	Engineering Mathematics – I (Common To All Branches)	BSC	3	1	0	4	40	60	100
3.	20CH051	Engineering Chemistry (Common To All Branches)	BSC	3	0	0	3	40	60	100
4.	20EE041	Basics of Electrical and Electronics Engineering (Common To AU, CE, CS, CSD IOT, IT, ME & SF)	ESC	3	0	0	3	40	60	100
5.	20CD111	Problem Solving Techniques with C Programming	ESC	3	0	0	3	40	60	100
MANDATORY COURSES										
6.	20MC151	Induction Program*	MC	0	0	0	0	-	-	-
7.	20GE051	தமிழ்மரபு/Heritage of Tamils	MC	3	0	0	1	40	60	100
PRACTICAL										
8.	20CH028	Chemistry Laboratory (Common To All Branches)	BSC	0	0	3	1	60	40	100
9.	20CD121	Problem Solving Techniques with C Programming Laboratory	ESC	0	0	3	1	60	40	100
10.	20AU127	Engineering Graphics Laboratory (Common To CE, CS, CSD, EC, EE & IT)	ESC	0	0	3	1	60	40	100
Total				17	1	10	19	800		

* Induction Program will be conducted for as per AICTE guidelines.


SEMESTER – II										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P		C	CA	ES
THEORY										
1.	20EN251	Technical English –II (Common To All Branches)	HSMC	2	0	1	3	40	60	100
2.	20MA232	Discrete Mathematics (Common To CS, CSD, IOT & IT)	BSC	3	1	0	4	40	60	100
3.	20PH051	Engineering Physics (Common To All Branches)	BSC	3	0	0	3	40	60	100
4.	20CD211	Human Computer Interaction	PCC	3	0	0	3	40	60	100
5.	20IO241	Python Programming (Common To CSD & IOT)	ESC	3	0	0	3	40	60	100
MANDATORY COURSES										
6.	20MC052	Environmental Science and Engineering (Common To All Branches)	MC	3	0	0	0	-	-	-
7.	20GE052	தமிழ்நுட்பத்தொழில்நுட்பமும்/ Tamils and Technology	MC	3	0	0	1	40	60	100
PRACTICAL										
8.	20PH028	Physics Laboratory (Common To All Branches)	BSC	0	0	3	1	60	40	100
9.	20GE028	Manufacturing Practices Laboratory	ESC	0	0	3	1	60	40	100
10.	20IO227	Python Programming Laboratory (Common To CSD & IOT)	ESC	0	0	3	1	60	40	100
Total				17	1	13	20	900		

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Department		Department of Computer Science and Engineering								
Programme		B.E - Computer Science and Design								
SEMESTER – III										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P		C	CA	ES
THEORY										
1.	20MA343	Numerical Computational Techniques (Common To CS, CSD, IOT & IT)	BSC	3	1	0	4	40	60	100
2.	20IO341	Java programming (Common To CSD & IOT)	PCC	3	0	0	3	40	60	100
3.	20IO342	Data Structures (Common To CSD & IOT)	PCC	3	0	0	3	40	60	100
4.	20EE231	Digital Principles and Computer Design (Common To CS,CSD & IOT)	ESC	3	0	0	3	40	60	100
5.	20CD311	Design Thinking	PCC	3	0	0	3	40	60	100
6.	20CD343	Computer Organization and Architecture (Common To CSD & IOT)	PCC	3	0	0	3	40	60	100
PRACTICAL										
7.	20IO327	Java programming Laboratory (Common To CSD & IOT)	PCC	0	0	3	1	60	40	100
8.	20EE225	Digital Systems Laboratory (Common To CS &CSD)	ESC	0	0	3	1	60	40	100
9.	20IO329	Data Structures Laboratory (Common To CSD & IOT)	PCC	0	0	3	1	60	40	100
10.	20HR351	Career Development Skills I	EEC	0	2	0	0	60	40	100
Total				18	3	9	22	1000		

SEMESTER – IV										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P		C	CA	ES
THEORY										
1.	20MA441	Probability and Decision Models (Common To CS, CSD, IOT & IT)	BSC	3	1	0	4	40	60	100
2.	20CD441	Theory of Computation (Common To CSD & IOT)	PCC	3	1	0	4	40	60	100
3.	20IO442	Database Management Systems (Common To CSD & IOT)	PCC	3	0	0	3	40	60	100
4.	20CD411	Data Analytics and Visualization	PCC	3	0	0	3	40	60	100
5.	20CD443	Design and Analysis of Algorithms (Common To CSD & IOT)	PCC	3	0	0	3	40	60	100
6.	20IO444	Operating System (Common To CSD & IOT)	PCC	3	0	0	3	40	60	100
PRACTICAL										
7.	20IO427	Database Management Systems Laboratory (Common To CSD & IOT)	PCC	0	0	3	1	60	40	100
8.	20CD421	Data Analytics and Visualization Laboratory	PCC	0	0	3	1	60	40	100
9.	20IO429	Operating System Laboratory (Common To CSD & IOT)	PCC	0	0	3	1	60	40	100
10.	20HR432	Career Development Skills II	EEC	0	2	0	0	60	40	100
Total				18	4	9	23	1000		

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Department		Department of Computer Science and Engineering								
Programme		B.E - Computer Science and Design								
SEMESTER – V										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Maximum Marks		
				L	T	P		CA	ES	Total
THEORY										
1.	20CD511	Principles of Compiler Design	PCC	3	1	0	4	40	60	100
2.	20CD512	Internet Programming	PCC	3	0	0	3	40	60	100
3.	20CD513	Object Oriented Analysis and Design	PCC	3	0	0	3	40	60	100
4.	20CD514	Computer Networks	PCC	3	0	0	3	40	60	100
5.	20CS515	Entrepreneurship Development	HSMC	3	0	0	3	40	60	100
6.		Professional Elective – I	PEC	3	0	0	3	40	60	100
PRACTICAL										
7.	20CD521	Internet Programming Laboratory	PCC	0	0	3	1	60	40	100
8.	20CD522	Computer Networks Laboratory	PCC	0	0	3	1	60	40	100
9.	20HR533	Career Development Skills III	EEC	0	2	0	0	60	40	100
Total				18	3	6	21	900		

SEMESTER – VI										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Maximum Marks		
				L	T	P		CA	ES	Total
THEORY										
1.	20HS051	Universal Human values and Understanding Harmony (Common To All Branches)	HSMC	3	0	0	3	40	60	100
2.	20CD611	User Experience Design	PCC	3	0	0	3	40	60	100
3.	20CD611	Cryptography and Network Security	PCC	3	0	0	3	40	60	100
4.	20CD612	Game Design	PCC	3	0	0	3	40	60	100
5.		Professional Elective – II	PEC	3	0	0	3	40	60	100
6.		Open Elective – I	OEC	3	0	0	3	40	60	100
PRACTICAL										
7.	20CD621	User Experience Design laboratory	PCC	0	0	3	1	60	40	100
8.	20CS622	Mini project	PROJ	0	0	6	3	60	40	100
9.	20HR634	Career Development Skills IV	EEC	0	2	0	0	60	40	100
Total				18	2	9	22	900		

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Department		Department of Computer Science and Engineering								
Programme		B.E - Computer Science and Design								
SEMESTER – VII										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P		C	CA	ES
THEORY										
1.	20CD711	Agile Methodologies	PCC	3	0	0	3	40	60	100
2.	20CD712	User Interface Design	PCC	3	0	0	3	40	60	100
3.	20GET71	Engineering Economics and Management	HSMC	3	0	0	3	40	60	100
4.		Professional Elective – III	PEC	3	0	0	3	40	60	100
5.		Professional Elective – IV	PEC	3	0	0	3	40	60	100
6.		Open Elective – II	OEC	3	0	0	3	40	60	100
PRACTICAL										
7.	20CD721	Agile Methodologies Laboratory	PCC	0	0	3	1	50	50	100
8.	20CD722	User Interface Design Laboratory	PCC	0	0	3	1	50	50	100
Total				18	0	6	20	800		

SEMESTER – VIII										
Sl.No.	Course Code	Course Name	Category	Hours/ Week			Credit	Maximum Marks		
				L	T	P		C	CA	ES
THEORY										
1.		Professional Elective – V	PEC	3	0	0	3	40	60	100
2.		Open Elective – III	OEC	3	0	0	3	40	60	100
PRACTICAL										
3.	20CD821	Project Work	PROJ	0	0	12	6	60	40	100
Total				6	0	12	12	300		

COURSE COMPONENT SUMMARY

S. No.	Subject Area	Credits Per Semester								Credits Total	Percentage Credits
		I	II	III	IV	V	VI	VII	VIII		
1.	HSMC	3	3	-	-	3	3	3	-	15	9.38
2.	BSC	8	8	4	4	-	-	-	-	24	15.00
3.	ESC	8	5	4	-	-	-	-	-	17	10.63
4.	PCC	-	4	14	19	15	10	8	-	70	43.75
5.	PEC	-	-	-	-	3	3	6	3	15	9.38
6.	OEC	-	-	-	-	-	3	3	3	9	5.63
7.	PROJ	-	-	-	-	-	3	-	6	9	5.63
8.	MC	-	1	-	-	-	-	-	-	1	0.63
TOTAL		19	20	22	23	21	22	20	12	160	100