



Sri Krishna College of Engineering and Technology

An Autonomous Institution, Affiliated to Anna University

Coimbatore – 641 008

DEPARTMENT OF INFORMATION TECHNOLOGY



CURRICULUM AND SYLLABI
B.TECH. INFORMATION TECHNOLOGY
REGULATION 2020
(2021-2025 BATCH)

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY
KUNIAMUTHUR, COIMBATORE-641008

DEPARTMENT OF INFORMATION TECHNOLOGY

Department Vision

To impart quality education by providing opportunities for shaping and transforming students into eminent and ethical IT professionals, researchers, innovators and entrepreneurs with requisite skill set to excel in the dynamic field of IT.

Department Mission

- To provide state of art computer education.
- To equip staff and students with the latest skills in the field
- To keep pace with new invention and technology development, thereby set the trend for the futuristic information technology education and research with ethical and moral values.

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

KUNIAMUTHUR, COIMBATORE-641008

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAMME OUTCOMES

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**SRI KRISHNA COLLEGE OF ENGINEERING AND
TECHNOLOGY KUNIAMUTHUR, COIMBATORE-641008**

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAMME EDUCATIONAL OBJECTIVES

PEO 1: Graduates will have a profound knowledge in the various programming languages and possess globally competent skill sets by inculcating continuous up gradation of their technical skills and personality traits.

PEO 2: Graduates will be able to analyze and find solutions to various applications and reconcile the dynamic trends in the field of Information Technology.

PEO 3: Graduates will contribute to the society by their ethical behaviour and effective teamwork.

PEO 4: Graduates will excel with different skills like effective communication, leadership qualities, and provide smart solutions in business environment

Mapping of PO's to PEO's

Programme Educational Objectives	Programme Outcomes											
	1	2	3	4	5	6	7	8	9	10	11	12
PEO 1	3	3	3	3	3	3	3	2	1	2	2	3
PEO 2	3	3	3	3	3	2	2	2	2	1	2	2
PEO 3	2	2	2	2	2	2	2	3	3	3	2	1
PEO 4	2	2	3	2	2	2	3	3	3	3	3	3

1	Reasonably agreed	2	Moderately agreed	3	Strongly agreed
----------	-------------------	----------	-------------------	----------	-----------------

SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

KUNIAMUTHUR, COIMBATORE-641008

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAMME SPECIFIC OUTCOMES

PSO 1:

Graduates will demonstrate multidisciplinary knowledge for problem solving by creating solutions for product based and application-based software for the advancement of the society.

PSO 2:

Graduates attain advance knowledge in Information and Communication Technologies (ICT) thereby creating real time solutions for different projects by using modern tools prevailing in the current trends.

PSO 3:

Graduates will exhibit state of the art technologies by applying their knowledge in various programming skills to overcome the demand of sustainable development.

SEMESTER I							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY CUM PRACTICAL							
1.	21MA101	Engineering Mathematics I	2/1/2	5	4	50/50	BSC
2.	21CH101	Engineering Chemistry	3/0/3	6	4.5	50/50	BSC
3.	21EN101	Technical Communication Skills	2/0/2	4	3	50/50	HSMC
4.	21IT101	Python Programming	3/0/2	5	4	50/50	PCC
5.	21CS101	Application Development Practices	2/0/2	4	3	50/50	PCC
PRACTICAL							
6.	21ME111	Engineering Graphics	1/0/3	4	2.5	40/60	ESC
MANDATORY COURSE							
7.	21MC101	Mandatory Course – I (Induction Programme)	3 Weeks			0/100	MC
Total				28	21	700	

SEMESTER II							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	21GE201	Universal Human Values	3/0/0	3	3	60/40	HSMC
2.	21CS201	C and Data Structures	3/0/0	3	3	60/40	PCC
THEORY CUM PRACTICAL							
3.	21MA201	Engineering Mathematics II	2/1/2	5	4	50/50	BSC
4.	21PH104	Physics	3/0/3	6	4.5	50/50	BSC
5.	21EE111	Basics of Electrical and Electronics Engineering	3/0/2	5	4	50/50	ESC
PRACTICAL							
6.	21CS202	Data Structures Laboratory	0/0/3	3	1.5	40/60	PCC
7.	21ME103	Engineering Practices Laboratory	0/0/3	3	1.5	40/60	ESC
MANDATORY COURSE							
8.	21MC102	Mandatory Course II (Environmental Sciences)	2/0/0	2	0	0/100	MC
Total				30	21.5	800	

SEMESTER III							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	21MA302	Mathematical Structures	3/1/0	4	4	60/40	BSC
THEORY CUM PRACTICAL							
2.	21IT301	Web Development using React	3/0/2	5	4	50/50	PCC
3.	21CS301	Operating Systems	3/0/2	5	4	50/50	PCC
4.	21CS302	Java Programming	3/0/2	5	4	50/50	PCC
5.	21CS303	Managing Data using RDBMS	3/0/2	5	4	50/50	PCC
6.	21AD302	Analysis of Algorithms	3/0/2	5	4	50/50	PCC
MANDATORY COURSE							
7.	21MCXXX	Mandatory Course-III	2/0/0	2	0	0/100	MC
Total				31	24	700	

SEMESTER IV							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	21EC411	Digital Principles and System Design	3/0/0	3	3	60/40	ESC
2.	21MA404	Random Variable & Statistics	3/1/0	4	4	60/40	BSC
3.	21IT401	Computer Architecture	3/0/0	3	3	60/40	PCC
4.	21IT402	Software Testing using Selenium	3/0/0	3	3	60/40	PCC
5.	21CS402	Web Frameworks	3/0/0	3	3	60/40	PCC
6.	21AD403	Cloud Computing	3/0/0	3	3	60/40	PCC
PRACTICAL							
7.	21CS403	Web Frameworks Laboratory	0/0/3	3	1.5	40/60	PCC
8.	21AD404	Cloud Computing Laboratory	0/0/3	3	1.5	40/60	PCC
MANDATORY COURSE							
9.	21MCXXX	Mandatory Course-IV	2/0/0	2	0	0/100	MC
Total				27	22	900	

SEMESTER V							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	21IT501	Formal Languages and Automata Theory	3/0/0	3	3	60/40	PCC
2.	21IT502	Data Communications and Computer Networks	3/0/0	3	3	60/40	ESC
3.	21EC511	Fundamentals of Data and Mobile Communications	3/0/0	3	3	60/40	ESC
4.	21XX0XX	Open Elective – I	3/0/0	3	3	60/40	OEC
5.	21IT9XX	Professional Elective-I	3/0/0	3	3	60/40	PEC
PRACTICAL							
6.	21XX9XX	Professional Elective-II	0/0/6	6	3	40/60	PEC
7.	21IT503	Data Communications and Computer Networks Laboratory	0/0/3	3	1.5	40/60	ESC
PROJECT WORK							
8.	21IT504	Mini Project	0/0/2	2	1	40/60	PW
MANDATORY COURSE							
9.	21MCXXX	Mandatory Course - V	2/0/0	2	0	0/100	MC
Total				28	20.5	900	

SEMESTER VI							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	21IT601	Embedded Systems and Internet of Things	3/0/0	3	3	60/40	PCC
2.	21CS601	Principles of Compiler Design	3/0/0	3	3	60/40	PCC
3.	21CS602	Cryptography and Network Security	3/0/0	3	3	60/40	PCC
4.	21XX0XX	Emerging Elective - I	3/0/0	3	3	60/40	EEC
5.	21IT9XX	Professional Elective-III	3/0/0	3	3	60/40	PEC
PRACTICAL							
6.	21IT9XX	Professional Elective-IV	0/0/6	6	3	40/60	PEC
7.	21IT602	Embedded Systems and Internet of Things Laboratory	0/0/3	3	1.5	40/60	PCC
8.	21CS604	Compiler Design Laboratory	0/0/3	3	1.5	40/60	PCC
Total				27	21	800	

SEMESTER VII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
THEORY							
1.	21IT701	Computational Biology	3/0/0	3	3	60/40	PCC
2.	21XX0XX	Open Elective-II	3/0/0	3	3	60/40	OEC
3.	21XX0XX	Emerging Elective-II	3/0/0	3	3	60/40	EEC
4.	21IT9XX	Professional Elective-V	3/0/0	3	3	60/40	PEC
5.	21IT9XX	Professional Elective-VI	3/0/0	3	3	60/40	PEC
THEORY CUM PRACTICAL							
6.	21IT702	Big Data Analytics	3/0/2	5	4	50/50	PCC
EMPLOYABILITY ENHANCEMENT SKILLS							
7.	21EES01	Employability Enhancement Skills			2	0/100	EES
Total				20	21	700	

SEMESTER VIII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
PROJECT WORK							
1	21IT801	Project	0/0/24	24	12	40/60	PW
Total				24	12	100	

HUMANITIES AND MANAGEMENT COURSES (6 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	21EN101	Technical Communication Skills	2/0/2	4	3	HSMC
2.	21GE201	Universal Human Values	3/0/0	3	3	HSMC

BASIC SCIENCE COURSES (25 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	21MA101	Engineering Mathematics I	2/1/2	5	4	BSC
2.	21CH101	Engineering Chemistry	3/0/3	6	4.5	BSC
3.	21MA201	Engineering Mathematics II	2/1/2	5	4	BSC
4.	21PH104	Physics	3/0/3	6	4.5	BSC
5.	21MA302	Mathematical Structures	3/1/0	4	4	BSC
6.	21MA404	Random Variable & Statistics	3/1/0	4	4	BSC

ENGINEERING SCIENCE COURSES (18.5 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	21ME111	Engineering Graphics	1/0/3	4	2.5	ESC
2.	21ME103	Engineering Practices Laboratory	0/0/3	3	1.5	ESC

3.	21EE111	Basics of Electrical and Electronics Engineering	3/0/2	5	4	ESC
4.	21EC411	Digital Principles and System Design	3/0/0	3	3	ESC
5.	21EC511	Fundamentals of Data and Mobile Communications	3/0/0	3	3	ESC
6.	21IT502	Data Communications and Computer Networks	3/0/0	3	3	ESC
7.	21IT503	Data Communications and Computer Networks Laboratory	0/0/3	3	1.5	ESC

PROFESSIONAL CORE COURSES (68.5 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	21CS101	Application Development Practices	2/0/2	4	3	PCC
2.	21IT101	Python Programming	3/0/2	5	4	PCC
3.	21CS201	C and Data Structures	3/0/0	3	3	PCC
4.	21CS202	Data Structures Laboratory	0/0/3	3	1.5	PCC
5.	21CS301	Operating Systems	3/0/2	5	4	PCC
6.	21AD302	Analysis of Algorithms	3/0/2	5	4	PCC
7.	21CS303	Managing Data using RDBMS	3/0/2	5	4	PCC
8.	21IT301	Web Development using React	3/0/2	5	4	PCC
9.	21CS302	Java Programming	3/0/2	5	4	PCC
10.	21IT401	Computer Architecture	3/0/0	3	3	PCC
11.	21IT402	Software Testing using Selenium	3/0/0	3	3	PCC
12.	21AD403	Cloud Computing	3/0/0	3	3	PCC
13.	21CS402	Web Frameworks	3/0/0	3	3	PCC
14.	21CS403	Web Frameworks Laboratory	0/0/3	3	1.5	PCC
15.	21AD404	Cloud Computing Laboratory	0/0/3	3	1.5	PCC
16.	21IT501	Formal Languages and Automata Theory	3/0/0	3	3	PCC
17.	21IT601	Embedded Systems and Internet of Things	3/0/0	3	3	PCC
18.	21IT602	Embedded Systems and Internet of Things Laboratory	0/0/3	3	1.5	PCC
19.	21CS601	Principles of Compiler Design	3/0/0	3	3	PCC
20.	21CS602	Cryptography and Network Security	3/0/0	3	3	PCC
21.	21CS604	Compiler Design Laboratory	0/0/3	3	1.5	PCC
22.	21IT701	Computational Biology	3/0/0	3	3	PCC
23.	21IT702	Big Data Analytics	3/0/2	5	4	PCC

PROFESSIONAL ELECTIVE COURSES

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
Software Development						
1.	21CS901	API Development using MVC Architecture	3/0/0	3	3	PEC
2.	21IT901	UI/UX Application Development	3/0/0	3	3	PEC
3.	21CS902	Cloud Services and Integration	3/0/0	3	3	PEC
4.	21IT902	Advanced Application Development	0/0/6	6	3	PEC
5.	21IT903	R Programming	3/0/0	3	3	PEC
6.	21IT904	Professional Readiness for Innovation, Employability and Entrepreneurship	0/0/6	6	3	PEC

7.	21IT905	Open Source Systems	3/0/0	3	3	PEC
8.	21IT906	Software Engineering and Design	3/0/0	3	3	PEC
9.	21AD906	App Development	0/0/6	6	3	PEC
Data Science and Computational Intelligence						
1.	21CS914	Fundamentals of Data Science	3/0/0	3	3	PEC
2.	21CS911	Artificial Intelligence and Machine learning	3/0/0	3	3	PEC
3.	21AD911	Statistics and Machine Learning	3/0/0	3	3	PEC
4.	21IT911	NLP with Predictive Analysis	3/0/0	3	3	PEC
5.	21IT912	Data Warehousing & Data Mining	3/0/0	3	3	PEC
6.	21IT913	Streaming Analytics	3/0/0	3	3	PEC
7.	21IT914	Cognitive Systems & Analytics	3/0/0	3	3	PEC
Networks & Security						
1.	21IT921	Cyber Security	3/0/0	3	3	PEC
2.	21AD921	Ethical Hacking	3/0/0	3	3	PEC
3.	21CS921	Cyber Threats and Vulnerabilities	3/0/0	3	3	PEC
4.	21AD922	Ethical Hacking and Auditing Frameworks	3/0/0	3	3	PEC
5.	21IT922	Wireless Sensor Networks and its Applications	3/0/0	3	3	PEC
6.	21IT923	Mobile Adhoc Networks	3/0/0	3	3	PEC
7.	21IT924	Blockchain Technology	3/0/0	3	3	PEC

OPEN ELECTIVE COURSES

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	21IT001	Mobile Applications Development using Android	3/0/0	3	3	OEC
2.	21IT002	PHP and MySQL	3/0/0	3	3	OEC
3.	21IT003	Blockchain Essentials	3/0/0	3	3	OEC
4.	21IT004	Cloud and Virtualization	3/0/0	3	3	OEC
5.	21IT005	REST API using Spring Boot	0/0/6	6	3	OEC
6.	21IT006	Introduction to Cyber Security	3/0/0	3	3	OEC

EMERGING ELECTIVE COURSES

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
Emerging Elective Courses – Stream 1						
1.	21IT008	Kotlin for Cross-platform Application Development	3/0/0	3	3	EEC
2.	21IT009	Extended Reality	3/0/0	3	3	EEC
3.	21IT011	Principles of Industry 4.0	3/0/0	3	3	EEC
Emerging Elective Courses – Stream 2						
4.	21IT007	Open-Source Deep Learning Frameworks	3/0/0	3	3	EEC
5.	21IT010	Explainable AI	3/0/0	3	3	EEC
6.	21IT012	Fog and Edge Computing	3/0/0	3	3	EEC

EMPLOYABILITY ENHANCEMENT SKILLS (2 Credits)

S. No	Course Code	Course Title	Credits	Category
1.	21EES01	Employability Enhancement Skills	2	EES

MANDATORY COURSES

S.No	Course Code	Course Title	Category
1.	21MC101	Induction Programme	MC
2.	21MC102	Environmental Sciences	MC
3.	21MC103	Soft Skills	MC
4.	21MC105	General Aptitude	MC
5.	21MC106	Life Skills and Ethics	MC
6.	21MC107	Stress Management	MC
7.	21MC108	Constitution of India	MC
8.	21MC109	Essence of Indian Traditional Knowledge	MC

VALUE ADDED COURSES

S.No	Course Code	Course Title	Credits	Category
1.	21VA900	Application Development using Flutter	1	VAC
2.	21VA901	Ruby on Rails	1	VAC

SCHEME OF CREDIT DISTRIBUTION – SUMMARY

S. No	Stream	Credits / Semester								Credits	AICTE Norms
		I	II	III	IV	V	VI	VII	VIII		
1.	Humanities (HSMC)	3	3							6	12
2.	Basic Sciences (BSC)	8.5	8.5	4	4					25	24
3.	Engineering Sciences (ESC)	2.5	5.5		3	7.5				18.5	29
4.	Professional Core (PCC)	7	4.5	20	15	3	12	7		68.5	49
5.	Professional Electives (PEC)					6	6	6		18	18
6.	Open Electives (OEC)					3		3		6	12
7.	Emerging Elective (EEC)						3	3		6	
8.	Project Work (PW)					1			12	13	15
9.	Employability Enhancement Skills (EES)							2		2	
10.	Mandatory Course (MC)										Non-Credit
Total		21	21.5	24	22	20.5	21	21	12	163	
AICTE (CSE)		17.5	20.5	23	22	21	22	18	15		159