



# **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 2022**

**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**

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**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.

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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 POs to PEOs**

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

1	Reasonably agreed	2	Moderately agreed	3	Strongly agreed
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**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.

**R2022**

<b>SEMESTER I</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credit</b>	<b>Ext/Int</b>	<b>Category</b>
1.	22MA102	Mathematics I	3/1/0	4	4	60/40	BSC
2.	22EC111	Digital Logic and Design	3/0/0	3	3	60/40	ESC
3.	22EN101	Technical Communication Skills	2/0/2	4	3	50/50	HSMC
4.	22CH101	Engineering Chemistry	3/0/2	5	4	50/50	BSC
5.	22IT101	Application Development Practices	3/0/2	5	4	50/50	PCC
6.	22CS101	Problem Solving using C++	3/0/2	5	4	50/50	PCC
7.	22EC112	Digital Logic Design Laboratory	0/0/2	2	1	40/60	ESC
8.	22MC101	Mandatory Course – I (Induction Programme)	3 Weeks			0/100	MC
<b>Total</b>				<b>28</b>	<b>23</b>	<b>800</b>	

<b>SEMESTER II</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credit</b>	<b>Ext/Int</b>	<b>Category</b>
1.	22MA202	Mathematics II	3/1/0	4	4	60/40	BSC
2.	22EE111	Basics of Electrical and Electronics Engineering	2/1/0	3	3	60/40	ESC
3.	22TA101	Heritage of Tamils	1/0/0	1	1	60/40	HSMC
4.	22PH201	Physics	3/0/2	5	4	50/50	BSC
5.	22CS201	Data Structures and Algorithms	3/0/2	5	4	50/50	PCC
6.	22IT201	Database Management Systems	3/0/2	5	4	50/50	PCC
7.	22AD201	Java Programming	3/0/2	5	4	50/50	PCC
8.	22EE114	Basics of Electrical and Electronics Engineering Laboratory	0/0/2	2	1	40/60	ESC
9.	22MC102	Mandatory Course II (Environmental Sciences)	2/0/0	2	0	0/100	MC
<b>Total</b>				<b>32</b>	<b>25</b>	<b>900</b>	

<b>SEMESTER III</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credit</b>	<b>Ext/Int</b>	<b>Category</b>
1.	22GE201	Universal Human Values	3/0/0	3	3	60/40	HSMC
2.	22IT301	Computer Architecture	3/0/0	3	3	60/40	PCC
3.	22MA302	Random Variables and Statistics	3/1/0	4	4	60/40	BSC
4.	22TA201	Tamils and Technology	1/0/0	1	1	60/40	HSMC
5.	22IT302	Web Technology	1/0/4	5	3	50/50	PCC
6.	22AD301	Design and Analysis of Algorithms	1/0/4	5	3	50/50	PCC
7.	22CS301	Advanced Java Programming	1/0/4	5	3	50/50	PCC
8.	22MCXXX	Mandatory Course-III	2/0/0	2	0	0/100	MC
<b>Total</b>				<b>28</b>	<b>20</b>	<b>800</b>	

<b>SEMESTER IV</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credit</b>	<b>Ext/Int</b>	<b>Category</b>
1.	22IT401	Formal Languages and Automata Theory	3/0/0	3	3	60/40	PCC
2.	22MA401	Optimization and Project Management	3/1/0	4	4	60/40	BSC
3.	22IT402	Software Testing	1/0/4	5	3	50/50	PCC
4.	22AD401	Cloud Computing	1/0/4	5	3	50/50	PCC
5.	22CS402	Web Frameworks	1/0/4	5	3	50/50	PCC
6.	22CS403	Operating Systems	3/0/2	5	4	50/50	PCC
7.	22MCXXX	Mandatory Course-IV	2/0/0	2	0	0/100	MC
<b>Total</b>				<b>29</b>	<b>20</b>	<b>700</b>	

<b>SEMESTER V</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credit</b>	<b>Ext/Int</b>	<b>Category</b>
1.	22IT501	Data Communications and Computer Networks	3/0/0	3	3	60/40	ESC
2.	22XX0XX	Open Elective – I	3/0/0 (or) 1/0/4 (or) 0/0/6	3/5/6	3	60/40 (or) 50/50 (or) 40/60	OEC
3.	22EC511	Fundamentals of Data and Mobile Communications	3/0/0	3	3	60/40	ESC
4.	22XXXXX	Professional Elective-I	3/0/0 (or) 1/0/4 (or) 0/0/6	3/5/6	3	60/40 (or) 50/50 (or) 40/60	PEC
5.	22XXXXX	Professional Elective-II	3/0/0 (or) 1/0/4 (or) 0/0/6	3/5/6	3	60/40 (or) 50/50 (or) 40/60	PEC
6.	22CS502	Principles of Compiler Design	3/0/2	5	4	50/50	PCC
7.	22IT502	Data Communications and Computer Networks Laboratory	0/0/3	3	1.5	40/60	ESC
8.	22IT503	Mini Project	0/0/2	2	1	40/60	PW
<b>Total</b>				<b>28</b>	<b>21.5</b>	<b>800</b>	

<b>SEMESTER VI</b>							
<b>S No.</b>	<b>Course Code</b>	<b>Course</b>	<b>L/T/P</b>	<b>Contact hrs/week</b>	<b>Credit</b>	<b>Ext/Int</b>	<b>Category</b>
1.	22IT601	Embedded Systems and Internet of Things	3/0/0	3	3	60/40	PCC
2.	22XXXX	Emerging Elective - I	3/0/0	3	3	60/40	EEC
3.	22CS602	Cryptography and Network Security	3/0/0	3	3	60/40	PCC
4.	22XXXXX	Professional Elective-III	3/0/0 (or) 1/0/4 (or) 0/0/6	3/5/6	3	60/40 (or) 50/50 (or) 40/60	PEC
5.	22XXXXX	Professional Elective-IV	3/0/0 (or) 1/0/4 (or) 0/0/6	3/5/6	3	60/40 (or) 50/50 (or) 40/60	PEC
6.	22IT602	Python Programming	3/0/2	5	4	50/50	PCC
7.	22IT603	Embedded Systems and Internet of Things Laboratory	0/0/3	3	1.5	40/60	PCC
<b>Total</b>				<b>26</b>	<b>20.5</b>	<b>700</b>	



SEMESTER VII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1.	22IT701	Computational Biology	3/0/0	3	3	60/40	PCC
2.	22XXXX	Open Elective-II	3/0/0 (or) 1/0/4 (or) 0/0/6	3/5/6	3	60/40 (or) 50/50 (or) 40/60	OEC
3.	22XXXX	Emerging Elective - II	3/0/0	3	3	60/40	EEC
4.	22XXXXX	Professional Elective-V	3/0/0 (or) 1/0/4 (or) 0/0/6	3/5/6	3	60/40 (or) 50/50 (or) 40/60	PEC
5.	22XXXX	Professional Elective-VI	3/0/0 (or) 1/0/4 (or) 0/0/6	3/5/6	3	60/40 (or) 50/50 (or) 40/60	PEC
6.	22IT702	Big Data Analytics	3/0/2	5	4	50/50	PCC
7.	22EES01	Employability Enhancement Skills			2	0/100	EES
<b>Total</b>				<b>20</b>	<b>21</b>	<b>700</b>	

SEMESTER VIII							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
<b>PROJECT WORK</b>							
1	22IT801	Project	0/0/24	24	12	40/60	PW
<b>Total</b>				<b>24</b>	<b>12</b>	<b>100</b>	

#### HUMANITIES AND MANAGEMENT COURSES (8 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	22EN101	Technical Communication Skills	2/0/2	4	3	HSMC
2.	22GE201	Universal Human Values	3/0/0	3	3	HSMC
3.	22TA101	Heritage of Tamils	1/0/0	1	1	HSMC
4.	22TA201	Tamils and Technology	1/0/0	1	1	HSMC

#### BASIC SCIENCE COURSES (24 Credits)

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	22MA102	Mathematics I	3/1/0	4	4	BSC
2.	22MA202	Mathematics II	3/1/0	4	4	BSC
3.	22PH201	Physics	3/0/2	5	4	BSC
4.	22CH101	Engineering Chemistry	3/0/2	5	4	BSC
5.	22MA302	Random Variables and Statistics	3/1/0	4	4	BSC
6.	22MA401	Optimization and Project Management	3/1/0	4	4	BSC

**ENGINEERING SCIENCE COURSES (15.5 Credits)**

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	22EE111	Basics of Electrical and Electronics Engineering	2/1/0	3	3	ESC
2.	22EE114	Basics of Electrical and Electronics Engineering Laboratory	0/0/2	2	1	ESC
3.	22EC111	Digital Logic and Design	3/0/0	3	3	ESC
4.	22EC112	Digital Logic Design Laboratory	0/0/2	2	1	ESC
5.	22EC511	Fundamentals of Data and Mobile Communications	3/0/0	3	3	ESC
6.	22IT501	Data Communications and Computer Networks	3/0/0	3	3	ESC
7.	22IT502	Data Communications and Computer Networks Laboratory	0/0/3	3	1.5	ESC

**PROFESSIONAL CORE COURSES (70.5 Credits)**

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
1.	22IT101	Application Development Practices	3/0/2	5	4	PCC
2.	22CS101	Problem Solving using C++	3/0/2	5	4	PCC
3.	22CS201	Data Structures and Algorithms	3/0/2	5	4	PCC
4.	22IT201	Database Management Systems	3/0/2	5	4	PCC
5.	22AD201	Java Programming	3/0/2	5	4	PCC
6.	22AD301	Design and Analysis of Algorithms	1/0/4	5	3	PCC
7.	22IT301	Computer Architecture	3/0/0	3	3	PCC
8.	22IT302	Web Technology	1/0/4	5	3	PCC
9.	22CS301	Advanced Java Programming	1/0/4	5	3	PCC
10.	22CS402	Web Frameworks	1/0/4	5	3	PCC
11.	22CS403	Operating Systems	3/0/2	5	4	PCC
12.	22IT401	Formal Languages and Automata Theory	3/0/0	3	3	PCC
13.	22IT402	Software Testing	1/0/4	5	3	PCC
14.	22AD401	Cloud Computing	1/0/4	5	3	PCC
15.	22CS502	Principles of Compiler Design	3/0/2	5	4	PCC
16.	22IT601	Embedded Systems and Internet of Things	3/0/0	3	3	PCC
17.	22IT602	Python Programming	3/0/2	5	4	PCC
18.	22CS602	Cryptography and Network Security	3/0/0	3	3	PCC
19.	22IT603	Embedded Systems and Internet of Things Laboratory	0/0/3	3	1.5	PCC
20.	22IT701	Computational Biology	3/0/0	3	3	PCC
21.	22IT702	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
<b>Software Development</b>						
1.	22CS901	Cloud Services and Integration	3/0/0	3	3	PEC
2.	22IT901	UI/UX Application Development	3/0/0	3	3	PEC
3.	22CS904	API Development using MVC Architecture	3/0/0	3	3	PEC
4.	22IT902	Advanced Application Development	0/0/6	6	3	PEC
5.	22IT903	R Programming	3/0/0	3	3	PEC
6.	22IT904	Professional Readiness for Innovation, Employability and Entrepreneurship	0/0/6	6	3	PEC
7.	22IT905	Open Source Systems	3/0/0	3	3	PEC
8.	22AD901	App Development	0/0/6	6	3	PEC
<b>Data Science and Computational Intelligence</b>						
1.	22CS914	Fundamentals of Data Science	3/0/0	3	3	PEC
2.	22CS911	Artificial Intelligence and Machine learning	3/0/0	3	3	PEC
3.	22AD911	Statistics and Machine Learning	3/0/0	3	3	PEC
4.	22AD912	Data Engineering	0/0/6	6	3	PEC
5.	22IT911	NLP with Predictive Analysis	3/0/0	3	3	PEC
6.	22IT912	Deep Learning Techniques	3/0/0	3	3	PEC
7.	22IT913	Streaming Analytics	3/0/0	3	3	PEC
8.	22IT914	Cognitive Systems & Analytics	3/0/0	3	3	PEC
<b>Networks &amp; Security</b>						
1.	22IT921	Cyber Security	3/0/0	3	3	PEC
2.	22AD921	Ethical Hacking	3/0/0	3	3	PEC
3.	22CS921	Cyber Threats and Vulnerabilities	3/0/0	3	3	PEC
4.	22AD922	Ethical Hacking and Auditing Frameworks	3/0/0	3	3	PEC
5.	22IT922	Wireless Sensor Networks and its Applications	3/0/0	3	3	PEC
6.	22IT923	Mobile Adhoc Networks	3/0/0	3	3	PEC
7.	22IT924	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.	22IT001	Mobile Applications Development using Android	3/0/0	3	3	OEC
2.	22IT002	PHP and MySQL	3/0/0	3	3	OEC
3.	22IT003	Blockchain Essentials	3/0/0	3	3	OEC
4.	22IT004	Cloud and Virtualization	3/0/0	3	3	OEC
5.	22IT005	REST API using Spring Boot	0/0/6	6	3	OEC
6.	22IT006	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
<b>Emerging Elective Courses – Stream 1</b>						
1.	22IT008	Kotlin for Cross-platform Application Development	3/0/0	3	3	EEC
2.	22IT009	Extended Reality	3/0/0	3	3	EEC
3.	22IT011	Principles of Industry 4.0	3/0/0	3	3	EEC

<b>Emerging Elective Courses – Stream 2</b>						
4.	22IT007	Open-Source Deep Learning Frameworks	3/0/0	3	3	EEC
5.	22IT010	Explainable AI	3/0/0	3	3	EEC
6.	22IT012	Fog and Edge Computing	3/0/0	3	3	EEC

#### **EMPLOYABILITY ENHANCEMENT SKILLS (2 Credits)**

<b>S. No</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>	<b>Category</b>
1.	22EES01	Employability Enhancement Skills	2	EES

#### **MANDATORY COURSES**

<b>S.No</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Category</b>
1.	22MC101	Induction Programme	MC
2.	22MC102	Environmental Sciences	MC
3.	22MC103	Soft Skills	MC
4.	22MC105	General Aptitude	MC
5.	22MC106	Life Skills and Ethics	MC
6.	22MC107	Stress Management	MC
7.	22MC108	Constitution of India	MC
8.	22MC109	Essence of Indian Traditional Knowledge	MC

#### **VALUE ADDED COURSES**

<b>S. No</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Credits</b>	<b>Category</b>
1.	22VA900	Application Development using Flutter	1	VAC
2.	22VA901	Ruby on Rails	1	VAC
3.	22VA130	Effective Communication Skills	2	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	1	4						8	16
2.	Basic Sciences (BSC)	8	8	4	4					24	23
3.	Engineering Sciences (ESC)	4	4			7.5				15.5	29
4.	Professional Core (PCC)	8	12	12	16	4	11.5	7		70.5	59
5.	Professional Electives (PEC)					6	6	6		18	12
6.	Open Electives (OEC)					3		3		6	9
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
<b>Total</b>		23	25	20	20	21.5	20.5	21	12	163	
<b>AICTE (CSE)</b>		18	23	23	21	20	23	20	15		163