

SRI KRISHNA ARTS AND SCIENCE COLLEGE
COIMBATORE – 641 008

DEPARTMENT OF INFORMATION AND COMPUTER TECHNOLOGIES
(2021-2024)

I. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)	
PEO 1	Prepare industry relevant quality graduates with programming and critical thinking skills to serve the domestic and global community.
PEO 2	Disseminate the conceptual knowledge in the concerned discipline for societal development and transformation.
PEO 3	Develop as a capable technical industry leader with outstanding communication skills.
PEO 4	Become technically competent in the field of computer science with a passion for lifelong learning.

II. PROGRAMME LEARNING OUTCOMES (PLOS)	
No.	The Graduates of Bachelor of Computer Technology Programme will be able to :
PLO1	Identify the programming and technical knowledge acquired in the current computational demands. (Cognitive)
PLO2	Analyze the complex problems and identify solutions through critical thinking skills . (Cognitive)
PLO3	Adapt to the latest tools and techniques used to develop domain based innovative solutions with the acquired technical and operational skills . (Psychomotor Skills)
PLO4	Function and contribute as a team in the diversified environment in taking competitive decision. (Affective)
PLO5	Communicate effectively with the computing community as well as society to comprehend effective documentation and presentation. (Affective)
PLO6	Incorporate advanced digital skills in designing, developing, managing and deploying in media and technical field. (Affective)
PLO7	Apply quantitative, numerical and statistical skills to solve challenging problems with effective solutions. (Cognitive)
PLO8	Articulate leadership skills in motivating the team towards the target in a multi-disciplinary environment. (Affective)
PLO9	Recognize the need and ability to involve independent and life-long learning in the changing era of technology. (Affective)
PLO10	Interpret the impact of professional business solutions on business environment for sustainable development. (Affective)
PLO11	Follow ethical principles and commit to professional responsibilities for a relevant technical practice. (Affective)

III. PROGRAMME LEARNING OUTCOMES VS GRADUATE ATTRIBUTES VS TAXONOMY OF VERBS														
PLO	Graduate Attributes											Blooms		
	Knowledge	Critical Thinking	Practical Skills	Team work	Communication skills	Digital skills	Numeracy	Leadership skills	Lifelong learning	Entrepreneurial skills	Ethics & Professionalism	Cognitive	Psychomotor	Affective
1	√											√		
2		√										√		
3			√										√	
4				√										√
5					√									√
6						√								√
7							√					√		
8								√						√
9									√					√
10										√				√
11											√			√

IV. PROGRAMME LEARNING OUTCOMES VS PROGRAMME EDUCATIONAL OBJECTIVES				
PLO	PEO 1	PEO 2	PEO 3	PEO 4
PLO 1	√			
PLO 2	√			
PLO 3		√		
PLO 4			√	
PLO 5			√	
PLO 6		√		
PLO 7		√		
PLO 8			√	
PLO 9				√
PLO 10				√
PLO 11		√		

V. ADDITIONAL PROGRAMME OUTCOMES (APOs)	
APO 1	The students will have an ability to be socially intelligent with intelligent quotient and emotional quotient.
APO 2	They will be having virtual collaborating ability.
APO 3	They will have the ability to use the social media effectively for productive use.
APO 4	They will have critical thinking and innovative skills.
APO 5	They will be provided with good digital footprint.

VI. PROGRAMME SPECIFIC OUTCOMES(PSOs)

PSO 1	Ability to understand the programming concepts, methodologies and algorithms to solve computational problems.
PSO 2	Ability to apply emerging software development techniques and tools in providing real-time solutions.

VII. CURRICULUM STRUCTURE FOR Bachelor of Computer Technology**Course Components, Credits & Marks Distribution**

Part No	Group	Basic Structure: Distribution of Courses	Number of Courses	Total Marks	Total Credits
I - IV	1	AEC – Ability Enhancement Courses	10	1000	31
III & IV	2	DSC – Discipline Specific Courses	15	1500	53
	3	DSE – Discipline Specific Electives	11	1000	37
	4	GEC – General Elective Courses	5	500	19
IV	5	ANCC 1 & 2 – Audit Non-Credit Courses	3	Completed	
V		ANCC 3 – Audit Non-Credit Courses	1	Grade	-
-	6	DTC – Drive Through Courses (SWAYAM-NPTEL, Coursera, Any courses certified by statutory bodies, etc.)	Any number	-	Addl. Credits
Total				4000	140

Group 1. Ability Enhancement Courses (AECs) (10 Courses)

AEC are the courses based upon the content that leads to knowledge enhancement. Ability Enhancement Courses (AEC) are the following.

S. No.	Course Code	Course Title	Semester	Ownership Department	Contact Hours	Credits	Marks
1.	21AEC02/ 21AEC07/ 21AEC11/ 21AEC17	AEC PART I: Language – I Tamil-I - Tamil Aruvi – I/ Hindi-I/ French-I/ Malayalam-I	I	Language Dept.	6	3	100
2.	21AEC22	AEC PART II: English-I : English for Professional Communication	I	English Dept.	6	3	100
3	21AEC41	AEC PART III: Probability and Statistics	I	Maths Dept.	5	3	100

4.	21AEC04/ 21AEC08/ 21AEC12/ 21AEC18	AEC PART I: Language – II Tamil-II - Tamil Aruvi – II/ Hindi-II/ French-II/ Malayalam-II	II	Language Dept.	6	3	100
5.	21AEC24	AEC PART II: English-II : Campus to Corporate	II	English Dept.	6	3	100
6.	21AEC33	AEC PART III: Academic Skill for Computer Studies	II	ICT Dept.	3	3	100
7.	21AEC60	AEC PART III: Developing Thinking Skills	V	ICT Dept.	3	3	100
8.	21AEC50	AEC PART III: Capstone Project	IV	ICT Dept.	-	4	100
9.	21AEC51	AEC PART IV: Environmental Studies	III	Bioscience Dept.	3	3	100
10.	21AEC56	AEC PART IV: Cyber Ethics	VI	ICT Dept.	3	3	100
Total						31	1000

Group 2. Discipline Specific Courses (DSCs) (15 Courses)

These courses are to be studied compulsorily by the students as a core requirement. The students are required to take DSCs across six semesters. The courses designed under this category aim to cover the basics that a student is expected to imbibe in the particular discipline. It includes Major project.

S. No.	Course Code	Course Title	Semester	Contact Hours	Credits	Marks
1	21CDC01	DSC 1: Digital Computer Fundamentals	I	4	4	100
2.	21CDC02A	DSC 2A: Programming in C	I	3	2	50
	21CDC02B	DSC 2B: Practical : C Programming		3	2	50
3	21CDC03	DSC 3: Data Structures and	II	4	4	100
4.	21CDC04A	DSC 4A: Object Oriented Programming using C++	II	3	2	50
	21CDC04B	DSC 4B: Practical :C++ Programming		3	2	50
5	21CDC05	DSC 5: Operating Systems	III	4	3	100
6.	21CDC06	DSC 6: Programming in Java	III	5	5	100

7.	21CDC07	DSC 7: Practical :Java Programming	III	3	2	100
8.	21CDC08A	DSC 8A: Software Engineering	III	3	2	50
	21CDC08B	DSC 8B: Practical :Software Testing using Selenium		2	2	50
9.	21CDC09	DSC 9: Computer Networks	IV	3	3	100
10.	21CDC10	DSC 10: Relational Database Management Systems	IV	5	4	100
11.	21CDC11	DSC 11: Practical : SQL and PL/SQL	IV	3	2	100
12.	21CDC12	DSC 12: Machine Learning using Python	V	5	4	100
13.	21CDC13	DSC 13: Practical : Machine Learning using Python	V	3	2	100
14.	21CDC14	DSC 14: Major Project	VI	6	4	100
15.	21CDC15A	DSC 15A: Data Mining	VI	3	2	50
	21CDC15B	DSC 15B: Practical : Data Science		3	2	50
Total					53	1500

Group 3. Discipline Specific Elective (DSEs) (10 Courses)

Discipline Specific Elective courses offered under the main discipline of study which may be specialized or advanced or supportive to the discipline of study. Students can choose any TEN courses from the following list.

S. No.	Course Code	Course Title	Ownership Department	Contact Hours	Credits	Marks
1.	21CDE01	DSE 1: Practical : Excel Macro	ICT Dept.	3	2	100
2.	21CDE02	DSE 1: Practical : Spreadsheet for Data Scientists	CS Dept.	3	2	100
3.	21CDE03	DSE 2: Mathematical Foundation for Computer Science	Maths Dept.	5	3	100
4.	21CDE04	DSE 3: Operations Research for Computer Studies	Maths Dept.	5	3	100
5.	21CDE05	DSE 3: Statistics for Data Science	CS Dept.	5	3	100
6.	21CDE06A	DSE 4A: PHP and MySQL	ICT Dept.	3	3	50
	21CDE06B	DSE 4B: Practical: PHP and MySQL		3	2	50
7.	21CDE07A	DSE 4A: Data Visualization	CS Dept.	3	3	50
	21CDE07B	DSE 4B: Practical : Data Visualization		3	2	50

		using Power BI				
8.	21CDE08	DSE 5: Embedded System	ECS Dept.	5	3	100
9.	21CDE09	DSE 5: Robotics and Applications	ECS Dept.	5	3	100
10.	21CDE10	DSE 5: PC Hardware	ECS Dept.	5	3	100
11.	21CDE11	DSE 6 : Industrial Exposure Training	ICT Dept	-	5	100
12.	21CDE12	DSE 7: Ethical Hacking	CS Dept.	5	3	50
13.	21CDE13	DSE 11: Practical : Ethical Hacking		4	2	50
14.	21CDE14	DSE 7: Web Intelligence	ICT Dept.	5	3	50
15.	21CDE15	DSE 11: Practical : Web Intelligence		4	2	50
16.	21CDE16	DSE 7: Android Programming	ICT Dept.	5	3	50
17.	21CDE17	DSE 11: Practical : Mobile Application Development using Android		4	2	50
18.	21CDE18	DSE 7: Programming in C#.net	CA Dept.	5	3	50
19.	21CDE19	DSE 11: Practical : C#.net		4	2	50
20.	21CDE20	DSE 7: Linux and Shell Programming	CA Dept.	5	3	50
21.	21CDE29	DSE 11: Practical : Shell Programming		4	2	50
22.	21CDE30	DSE 7: Visualization Analysis and Design	CA Dept.	5	3	50
23.	21CDE31	DSE 11 Practical : Data Visualization Techniques		4	2	50
24.	21CDE32	DSE 7: Time Series Analysis	CS Dept.	5	3	50
25.	21CDE33	DSE 11: Practical : Scientific Programming Using R		4	2	50
26.	21CDE21	DSE 8: Cyber Security	CS Dept.	5	3	100
27.	21CDE22	DSE 8: Mobile Computing	ICT Dept.	5	3	100
28.	21CDE23	DSE 8: Information Retrieval	CA Dept.	5	3	100
29.	21CDE24	DSE 8: Reinforcement Learning	CS Dept.	5	3	100
30.	21CDE25A	DSE 9A: Data Analytics using R	ICT Dept.	3	2	50

	21CDE25B	DSE 9B: Practical : Data Analytics using R		3	2	50
31.	21CDE26A	DSE 9A : Next Generation Databases - NoSQL	CS Dept.	3	2	50
	21CDE26B	DSE 9B: Practical : Next Generation Databases - NoSQL		3	2	50
32.	21CDE27	DSE 10: Artificial Intelligence	ICT Dept.	4	4	100
33.	21CDE28	DSE 10 : Artificial Intelligence and Analytics	CS Dept.	4	4	100
Total					37	1000

Industrial Exposure Training (IET):

Industrial Exposure Training during fifth semester for a period of 4 weeks is mandatory for all students..

The Continuous Internal Assessment mark distribution for IET is as follows:

Component	Mode of Conduct	Project Coverage	Marks
3 Reviews	Presentation	Phase by Phase	25
Work Diary	Written	Phase by Phase	10
Report	Submission	Entire Phases	15
Total			50

Viva-voce Marks for the Industrial Exposure Training will be given based on the report and viva-voce examination, conducted by the Department.

Report : 30 Marks

Viva-voce : 20 Marks

Major Project:

During the Sixth semester each student should undertake a project work and submit the report. A guide will be allotted to each student by the Department. A student can select any research topic in discussion with the guide. The internal and external examiners will evaluate the Project report jointly for **50 Marks** and Viva-voce examination shall be conducted jointly for **50 Marks**.

Three Reviews should be conducted and marks have to be entered in Myclassroom portal as follows:

Review : 25 Marks

Work Dairy : 10 Marks

Report : 15 Marks

Total : 50 (Internal) Marks

End Semester Viva-Voce will be conducted for 50 (External) Marks.

(Dissertation - 30 Marks & Viva-voce - 20Marks)

Group 4. Generic Elective Courses (GECs) (5 Courses)

Generic Elective Courses are advanced level course for the discipline. They are not specialization specific. No overlapping with specialization courses. A student of specific discipline of any specialization can subscribe. These courses are future and recent developments in the respective discipline. The student has to subscribe any 5 courses in the following list:

Sl.No.	Course Code	Course Title	Semester	Ownership Department	Contact Hours	Credits	Marks
1.	21CGE01	Agile Software Development	III	ICT Dept.	5	4	100
	21CGE02	Social Media Mining					
	21CGE03	Big Data Analytics					
2.	21GEC01	Spoken Tamil	IV	Language Dept.	3	3	100
	21GEC02	Spoken Hindi					
	21GEC03	Spoken Telugu					
	21GEC04	Spoken Malayalam					
	21GEC05	Spoken French					
3.	21CGE04	Computer Forensics	IV	ICT Dept.	5	4	100
	21CGE05	Cyber Threat Intelligence					
	21CGE06	Green Computing					
4.	21CGE07	Wireless Technology	V	ICT Dept.	5	4	100
	21CGE08	Internet of Things					
	21CGE09	Cloud Computing					
5.	21CGE10	Organizational Behaviour	VI	Management Science Dept.	5	4	100
	21CGE11	Human Resource Management					
	21CGE12	Management Information System					
Total						19	500

Group 5. Audit Non-Credit Courses (ANCC)

Non Credit Courses are intended for students who want to gain general knowledge, learn a new skill, upgrade existing skills, enrich their understanding of a wide range of topics, or develop personal interests. A student has to complete any two courses during Semester I and II.

Part IV - Semester I - ANCC 1 & Semester II - ANCC 2		
S. No.	Course Code	Course Name
1.	21ANC01	Human Rights
2.	21ANC02	Women's Rights
3.	21ANC03	Yoga for Human Excellence
4.	21ANC04	Indian Culture and Heritage
5.	21ANC05	Introduction to Cyber Security
6.	21ANC06	Consumer Protection
7.	21ANC07	Constitution of India
8.	21ANC08	Waste Management

Student has to take part in any one extension activity during their course of study.

Part V- ANCC 3 - Extension Activities		
S. No.	Course Code	Course Name
1.	21ANC09	National Service Scheme
2.	21ANC10	National Cadet Corps
3.	21ANC11	Youth Red Cross
4.	21ANC12	Red Ribbon Club
5.	21ANC13	Rotaract Club
6.	21ANC14	Sports
7.	21ANC15	Association Activities

Group 6. Drive-Through Course (DTC)

These courses are intended to bring out and promote the self-learning initiative of the students – where their own motivation is what drives them to complete the course and not external compulsions. This fosters the habit of keeping oneself updated always by means of self-study. It gives the students the opportunities to explore new areas of interest and earn additional credits. Students can take any number of courses under this cafeteria system. The credits will not be taken for CGPA calculation. Additional 4 credits per Course will be given on submission of certificate.

1. SWAYAM-NPTEL
2. Coursera
3. Any courses certified by statutory bodies

VIII: SEMESTER-WISE SCHEME

Semester I										
Course Code	Course Title	T/ P/E	ESE Dur. Hrs	Ins. Hrs/ Week	CIA Marks	ES Marks	Total Marks	Credit s	SD/ EM/ EN	G/L/ R/N
21AEC02/ 21AEC07/ 21AEC11/ 21AEC17/ 21AEC61	AEC PART I: Tamil-I:Tamil Aruvi-I/ Hindi - I/ French – I/ Malayalam - I/ Sanskrit –I	T	3	6	50	50	100	3	SD	R/ N/ G/ R/ G
21AEC22	AEC PART II: English I: English for Professional Communication	T	3	6	50	50	100	3	SD	G
21CDC01	DSC 1: Digital Computer Fundamentals	T	3	4	50	50	100	4	SD	G
21CDC02A	DSC 2A : Programming in C	E	2	3	25	25	50	2	SD/ EM	G
21CDC02B	DSC 2B : Practical: C Programming		2	3	25	25	50	2	SD/ EM	G
21CDE01/ 21CDE02	DSE 1: Practical: Excel Macro / Practical : Spreadsheet for Data Scientists	P	3	3	50	50	100	2	SD	G
21AEC41	AEC PART III: Probability and Statistics	T	3	5	50	50	100	3	SD/ EM	G
	ANCC-1 (NF2F)	T	2	-	-	-	Completed		EN	G
Total				30+2			600	19		

	Semester II									
Course Code	Course Title	T/ P/E	ESE Dur. Hrs	Ins. Hrs/ Week	CIA Marks	ES Marks	Total Marks	Credit s	SD/ EM/ EN	G/L/ R/N
21AEC04/ 21AEC08/ 21AEC12/ 21AEC18/ 21AEC62	AEC PART I: Language II: TAMIL-II: Tamil Aruvi – II/ Hindi - II/ French – II/ Malayalam – II Sanskrit –II	T	3	6	50	50	100	3	SD	R/ N/ G/ R/ G

21AEC24	AEC PART II English II: Campus to Corporate	T	3	6	50	50	100	3	SD	G
21AEC33	AEC PART III Academic Skill for Computer Studies	T	3	3	50	50	100	3	SD	G
21CDC03	DSC 3: Data Structures and Algorithms	T	3	4	50	50	100	4	SD/ EM	G
21CDC04A	DSC 4A: Object Oriented Programming using C++	E	2	3	25	25	50	2	SD/ EM	G
21CDC04B	DSC 4B: Practical: C++ Programming		2	3	25	25	50	2	SD/ EM	G
21CDE03	DSE 2: Mathematical Foundation for Computer Science	T	3	5	50	50	100	3	SD/ EM	G
	ANCC-2 (NF2F)	T	2	-	-	-	Completed			R
Total				30+2			600	20		
Semester III										
Course Code	Course Title	T/ P/E	ESE Dur. Hrs	Ins. Hrs/ Week	CIA Marks	ES Marks	Total Marks	Credit s	SD/ EM/ EN	G/L/ R/N
21CDC05	DSC 5: Operating Systems	T	3	4	50	50	100	3	SD/ EM	G
21CDC06	DSC 6: Programming in Java	T	3	5	50	50	100	5	SD/ EM	G
21CDC07	DSC 7: Practical: Java Programming	P	3	3	50	50	100	2	SD/ EM	G
21CDC08A	DSC 8A: Software Engineering	E	2	3	25	25	50	2	SD/ EM	G
21CDC08B	DSC 8B: Practical: Software Testing Using Selenium		2	2	25	25	50	2	SD/ EM	G
21AEC51	AEC PART IV: Environmental Studies	T	3	3	50	50	100	3	SD	G

21CGE01/ 21CGE02/ 21CGE03	GEC I: Agile Software Development/ Social Media Mining/ Big Data Analytics	T	3	5	50	50	100	4	SD/ EM	G
21CDE04 / 21CDE05	DSE 3: Operations Research for Computer Studies / Statistics for Data Science	T	3	5	50	50	100	3	SD/ EM	G
Total				30			700	24		

Semester IV										
Course Code	Course Title	T/P/E	ESE Dur. Hrs	Ins. Hrs/ Week	CIA Marks	ES Marks	Total Marks	Credits	SD/ EM/ EN	G/L/ R/N
21CDC09	DSC 9: Computer Networks	T	3	3	50	50	100	3	SD/ EM	G
21AEC50	AEC PART III: Capstone Project	-	3	-	50	50	100	4	SD/ EM / EN	N
21CDC10	DSC 10: Relational Database Management Systems	T	3	5	50	50	100	4	SD	G
21CDC11	DSC 11: Practical: SQL and PL/SQL	P	3	3	50	50	100	2	EM	G
21CDE06A / 21CDE07A	DSE 4A: PHP and MySQL / Data Visualization	E	2	3	25	25	50	3	SD	G
21CDE06B / 21CDE07B	DSE 4B: Practical: PHP and MySQL / Practical : Data Visualization using Power BI		2	3	25	25	50	2	EM	G
21CDE08 / 21CDE09 / 21CDE10	DSE 5: Embedded System / Robotics and Applications / PC Hardware	T	3	5	50	50	100	3	SD	N
21GEC01/ 21GEC02/ 21GEC03/ 21GEC04/ 21GEC05	GEC 2: Spoken Tamil/ Spoken Hindi / Spoken Telugu / Spoken Malayalam/ Spoken French	T	3	3	100	-	100	3	SD	R/ N/ R/ R/ G

21CGE04/ 21CGE05/ 21CGE06	GEC 3: Computer Forensics / Cyber Threat Intelligence / Green Computing	T	3	5	50	50	100	4	SD/ EM	G
Total				30			800	28		
Semester V										
Course Code	Course Title	T/ P/E	ESE Dur. Hrs	Ins. Hrs/ Week	CIA Marks	ES Marks	Total Marks	Credit s	SD/ EM/ EN	G/L/ R/N
21CDE11	DSE 6: Industrial Exposure Training	-	3	4 Weeks	50	50	100	5	EN	G
AND										
21AEC60	AEC PART III: Developing Thinking Skills	T	3	3	50	50	100	3	SD	G
21CDC12	DSC 12: Machine Learning using Python	T	3	5	50	50	100	4	SD/ EM	G
21CDC13	DSC 13: Practical: Machine Learning using Python	P	3	3	50	50	100	2	SD/ EM	G
21CDE12/ 21CDE14/ 21CDE16/ 21CDE18/ 21CDE20/ 21CDE30/ 21CDE32	DSE 7: Ethical Hacking/ Web Intelligence/ Android Programming/ Programming in C#.net/ Linux and Shell Programming/ Visualization Analysis and Design / Time Series Analysis	T	3	5	25	25	50	3	EN	G

21CDE13/ 21CDE15/ 21CDE17/ 21CDE19/ 21CDE29/ 21CDE31/ 21CDE33	DSE 11: Practical: Ethical Hacking/ Practical: Web Intelligence/ Practical: Mobile Application Development using Android/ Practical: C#.net/ Practical: Shell Programming/ Practical: Data Visualization Techniques / Practical : Scientific Programming Using R	P	3	4	25	25	50	2	EN	G
21CDE21 / 21CDE22 / 21CDE23 / 21CDE24	DSE 8: Cyber Security / Mobile Computing / Information Retrieval / Reinforcement Learning	T	3	5	50	50	100	3	SD	G
21CGE07/ 21CGE08/ 21CGE09	GEC 4: Wireless Technology/ Internet of things/ Cloud Computing	T	3	5	50	50	100	4	SD/ EM	G
				30			700	26		
Semester VI										
Course Code	Course Title	T/ P/E	ESE Dur. Hrs	Ins. Hrs/ Week	CIA Marks	ES Marks	Total Marks	Credits	EM/ SD/ EN	G/ L/N/ R
21AEC56	AEC PART IV : Cyber Ethics	T	3	3	50	50	100	3	SD	G
21CDC14	DSC 14: Major Project	-	3	6	50	50	100	4	EN	G
21CDC15A	DSC 15A: Data Mining	E	2	3	25	25	50	2	SD	G
21CDC15B	DSC 15B: Practical: Data Science		2	3	25	25	50	2	EM	G
21CDE25A / 21CDE26A	DSE 9A: Data Analytics using R / Next Generation Databases - NoSQL	E	2	3	25	25	50	2	SD / EM	G

21CDE25B / 21CDE26B	DSE 9B: Practical: Data Analytics using R / Practical : Next Generation Databases – NoSQL		2	3	25	25	50	2	SD/EM	G
21CDE27 / 21CDE28	DSE 10: Artificial Intelligence / Artificial Intelligence and Analytics	T	3	4	50	50	100	4	SD/EM	G
21CGE10/ 21CGE11/ 21CGE12	GEC 5: Organizational Behavior/ Human Resource Management/ Management Information System	T	3	5	50	50	100	4	SD	G
	ANCC 3: Extension Activities	-	3	-	-	-	Grade	-	SD	N
Total				30			600	23		
Total							400			140
Drive-Through Course (DTC): Courses offered in SWAYAM-NPTEL, Coursera OR Any courses certified by statutory bodies.				Additional 4 credits per Course will be given on submission of Certificate					During Semester I to Semester VI	

Semester-wise Distribution of Marks and Credits:

Semester	Total Marks	Total Credits
I	600	19
II	600	20
III	700	24
IV	800	28
V	700	26
VI	600	23
Total	4000	140

OFFERED BY**List of Courses Offered by Mathematics Department**

Semester	Course Code	Course Name	Programme	T/ P / E	Ins. Hrs	CIA	ES	Total Marks	Credit
I	21AEC41	AEC PART III: Probability and Statistics	ICT	T	5	50	50	100	3
II	21CDE03	DSE 2: Mathematical Foundation for Computer Science	ICT	T	5	50	50	100	3
III	21CDE04	DSE 3: Operations Research for Computer Studies	ICT	T	5	50	50	100	3

List of Courses Offered by Electronics and Communication Systems Department
(Any 1 out of 3) during Semester IV

Semester	Course Code	Course Name	Programme	T/ P / E	Ins. hrs	CIA	ES	Total Marks	Credit
IV	21CDE08	DSE 5: Embedded System	ICT	T	5	50	50	100	3
IV	21CDE09	DSE:5 Robotics and Applications	ICT	T	5	50	50	100	3
IV	21CDE10	DSE 5: PC Hardware	ICT	T	5	50	50	100	3

OFFERED TO**OFFERED TO****List of Courses Offered to B.Sc (BT) / B.Sc (MB)**

Semester	Course Code	Course Name	Programme	T/P/E	Ins. hrs	CIA	ES	Total Marks	Credit
IV	21BDE03A/ 21RDE03A	Programming in ANSI C	B.Sc BT/ B.Sc MB	E	3	25	25	50	2
	21BDE03B/ 21RDE03XB	Practical: Programming in ANSI C			2	25	25	50	2

Amendments in 2021 Batch Undergraduate Programs (B.Sc CS /IT /CT /CSA / BCA)

- The following DSE courses are dropped in Semester V .

**DSE 6A : 21CDE12A - System Modeling using UML /
21CDE13A - Cloud Computing**

**DSE 6B : 21CDE12B - Practical :System Modeling using UML /
21CDE13B - Practical : Cloud Computing**

- **AEC Part III : 21AEC40 - Computational Thinking** is replaced by **21AEC60 - Developing Thinking Skills.**
- The **DSC12 : 21CDC12 - Programming in Python** course title amended as **Machine Learning using Python** and the instructional hours are updated from 4 hours to 5 hours.
- The following **DSE 8 courses** instructional hours are updated from 4 hours to 5 hours. **21CDE21 - Cyber Security / 21CDE22 - Mobile Computing / 21CDE23 - Information Retrieval / 21CDE24 - Reinforcement Learning**
- The **DSE 7A & 7B embedded course** is converted as individual theory and practical course. The following changes were carried out,
 - **DSE 7A** is changed as **DSE 7**.The instructional hours for DSE 7 is updated from 3 Hours to 5 Hours.
 - **DSE 7B** is changed as **DSE 11**. The instructional hours for DSE 11 is updated from 3 Hours to 4 Hours.