SRI KRISHNA ARTS AND SCIENCE COLLEGE

An Autonomous College Affiliated to Bharathiar University

Coimbatore -641008, Tamil Nadu, India.

LEARNING OUTCOMES BASED CURRICULUM FRAMEWORK (LOCF)

B.Sc INFORMATION TECHNOLOGY

For 2022-23 admitted students

DEPARTMENT OF ICT & COGNITIVE SYSTEMS

SRI KRISHNA ARTS AND SCIENCE COLLEGE
COIMBATORE – 641008

DEPARTMENT OF ICT & COGNITIVE SYSTEMS

(2022-2023)

I. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)	
PEO 1	Prepare industry relevant quality graduates with programming and critical AEC 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 B.Sc Information 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)
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 VSTAXONOMY 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 OUTOMES 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 (PSO's)	
PSO 1	Ability to understand the programming concepts, methodologies and algorithmto solve computational problems.
PSO 2	Ability to apply emerging software development techniques and tools in providing real-time solutions.

VII. Curriculum Structure for COMPUTER SCIENCE

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	11	1100	30
III& IV	2	DSC – Discipline Specific Courses	16	1500	60
	3	DSE – Discipline Specific Electives	11	1000	36
	4	GEC – Generic Elective Courses	5	400	14
IV	5	ANCC I & II – Audit Non-Credit Courses	3	Completed	
V		ANCC III – 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) (11 Courses)

AEC are the courses based uponthe 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	22AEC02/ 22AEC07/ 22AEC11/ 22AEC17/ 22AEC21/	**AEC Part I:Language – I:** Tamil-I – Tamizhum Ariviyalum/ Hindi-I/ French-I/ Malayalam-I Sanskrit – I	I	Language Dept.	6	3	100
2	22AEC26	**AEC Part II:English-I:** English for Professional Communication	I	English Dept.	6	3	100
3	22AEC41	**AEC Part III:**Probability and Statistics	I	Mathematics Dept.	5	3	100

4	22AEC04/ 22AEC08/ 22AEC12/ 22AEC18/ 22AEC22	**AEC Part I: Language – II:** Tamil-II - Panpattu Padhivugalum Ariviyalalargalum/ Hindi-II/ French-II/ Malayalam-II/ Sanskrit – II	II	Language Dept.	6	3	100
5	22AEC28	**AEC Part II:English – II:** Campus to Corporate	II	English Dept	6	3	100
6	22AEC33	**AEC Part III:** Academic Skills for Computer Studies	II	CS Dept.	3	3	100
7	22AEC53	**AEC Part V:** Capstone Project for Computer Studies	III	CS Dept.	-	4	100
8	22AEC81/ 22AEC83/ 22AEC85	**AEC Part IV: Tamil-III –** Neelakkurinchi/ **Hindi-III -** Pryojanmoolak Hindi/ Advanced French-I	III	Language Dept.	3	2	100
9	22AEC91	**AEC Part IV: English III** - Creative Writing	III	Language Dept.	3	2	100
10	22AEC82/ 22AEC84/ 22AEC86	**AEC Part IV: Tamil-IV –** Semmullai/ **Hindi-IV -** Takneeki Hindi Basha/ Advanced French-II	IV	Language Dept.	3	2	100
11	22AEC92	**AEC Part IV: English III** - English for Digital Media	IV	Language Dept.	3	2	100
					Total	**30**	**1100**

Group 2. Discipline Specific Courses (DSCs) (16 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	22CSU01/ 22ITU01/ 22CTU01/ 22CAU01/ 22SAU01/ 22SSU01/ 22DSU01/ 22AIU01	**DSC 1**: Digital Computer Fundamentals	I	4	4	100
2	22CSU02A/ 22ITU02A /	**DSC 2A:** Programming in C	I	3	2	50

	22CTU02A/ 22CAU02A/ 22SAU02A/ 22SSU02A/ 22DSU02A/ 22AIU02A					
	22CSU02B/ 22ITU02B/ 22CTU02B/ 22CAU02B/ 22SAU02B/ 22SSU02B/ 22DSU02B/ 22AIU02B	**DSC 2B:** Practical: C Programming		3	2	50
3	22CSU03/ 22ITU03/ 22CTU03/ 22CAU03/ 22SAU03/ 22SSU03/ 22DSU03/ 22AIU03	**DSC 3:** Data Structures and Algorithms	II	4	4	100
4	22CSU04A/ 22ITU04A/ 22CTU04A/ 22CAU04A/ 22SAU04A/ 22SSU04A/ 22DSU04A/ 22AIU04A	**DSC 4A:** Object Oriented Programming using C++	II	3	2	50
	22CSU04B/ 22ITU04B/ 22CTU04B/ 22CAU04B/ 22SAU04B/ 22SSU04B/ 22DSU04B/ 22AIU04B	**DSC 4B:** Practical: C++ Programming		3	2	50
5	22CSU05/ 22ITU05/ 22CTU05/ 22CAU05/ 22SAU05/ 22SSU05/ 22DSU05/ 22AIU05	**DSC 5:** Operating System	III	3	3	100
6	22CSU06/ 22ITU06/ 22CTU06/ 22CAU06/ 22SAU06/ 22SSU06/ 22DSU06/ 22AIU06	**DSC 6:** Programming in Java	III	4	4	100

7	22CSU07/ 22ITU07/ 22CTU07/ 22CAU07/ 22SAU07/ 22SSU07/ 22DSU07/ 22AIU07	**DSC 7:** Practical: Java Programming	III	3	3	100
8	22CSU10A/ 22ITU10A/ 22CTU10A/ 22CAU10A/ 22SAU10A/ 22SSU10A/ 22DSU10A/ 22AIU10A	**DSC 10A:** Software Engineering and UML	III	3	3	50
	22CSU10B/ 22ITU10B/ 22CTU10B/ 22CAU10B/ 22SAU10B/ 22SSU10B/ 22DSU10B/ 22AIU10B	**DSC 10B:** Practical: Software Testing and UML	III	2	2	50
9	22CSU11/ 22ITU11/ 22CTU11/ 22CAU11/ 22SAU11/ 22SSU11/ 22DSU11/ 22AIU11	**DSC 11:** Computer Networks	III	4	4	100
10	22CSU08/ 22ITU08/ 22CTU08/ 22CAU08/ 22SAU08/ 22SSU08/ 22DSU08/ 22AIU08	**DSC 8:** Relational Database Management Systems	IV	5	5	100
11	22CSU09/ 22ITU09/ 22CTU09/ 22CAU09/ 22SAU09/ 22SSU09/ 22DSU09/ 22AIU09	**DSC 9:** Practical: SQL and PL/SQL	IV	4	2	100
12	22CSU12/ 22ITU12/ 22CTU12/ 22CAU12/ 22SAU12/ 22SSU12/	**DSC 12:** Artificial Intelligence	V	5	4	100

	22DSU12/ 22AIU12					
13	22CSU13/ 22ITU13/ 22CTU13/ 22CAU13/ 22SAU13/ 22SSU13/ 22DSU13/ 22AIU13	**DSC 13:** Machine Learning using Python	V	5	4	50
14	22CSU46/ 22ITU46/ 22CTU46/ 22CAU46/ 22SAU46/ 22SSU46/ 22DSU46/ 22AIU46	**DSC 16:** Practical: Machine Learning using Python	V	4	2	50
15	22CSU14/ 22ITU14/ 22CTU14/ 22CAU14/ 22SAU14/ 22SSU14/ 22DSU14/ 22AIU14	**DSC 14:** Major Project	VI	6	4	100
16	22CSU15A/ 22ITU15A/ 22CTU15A/ 22CAU15A/ 22SAU15A/ 22SSU15A	**DSC 15A:** Visualization Analysis and Design	VI	3	2	50
	22CSU15B/ 22ITU15B/ 22CTU15B/ 22CAU15B/ 22SAU15B/ 22SSU15B	**DSC 15B:** Practical: Data Visualization Techniques		3	2	50
Total					**60**	**1500**

Group 3. Discipline Specific Elective (DSEs) (11 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	22CSU16/ 22ITU16/ 22CTU16/ 22CAU16/ 22SAU16/ 22SSU16/ 22DSU16/ 22AIU16	**DSE 1:** Practical: Excel Macro	CS Dept	3	2	100
	22CSU17/ 22ITU17/ 22CTU17/ 22CAU17/ 22SAU17/ 22SSU17/ 22DSU17/ 22AIU17	**DSE 1:** Practical: Spreadsheet				
2	22CSU18/ 22ITU18/ 22CTU18/ 22CAU18/ 22SAU18/ 22SSU18/ 22DSU18/ 22AIU18	**DSE 2:** Computer Forensics	ICT Dept.	5	4	100
	22CSU19/ 22ITU19/ 22CTU19/ 22CAU19/ 22SAU19/ 22SSU19/ 22DSU19	**DSE 2:** Green Computing				
	22CSU20/ 22ITU20/ 22CTU20/ 22CAU20/ 22SAU20/ 22SSU20/ 22DSU20/ 22AIU20	**DSE 2:** Cyber Threat Intelligence				
3	22CSU21A/ 22ITU21A/ 22CTU21A/ 22CAU21A/ 22SAU21A/ 22SSU21A/ 22DSU21A/ 22AIU21A	**DSE 3A:** VB .NET		3	2	50
	22CSU21B/ 22ITU21B/ 22CTU21B/ 22CAU21B/ 22SAU21B/	**DSE 3B:** Practical: VB .NET		2	2	50

	22SSU21B/ 22DSU21B/ 22AIU21B		CS Dept			
	22CSU22A/ 22ITU22A/ 22CTU22A/ 22CAU22A/ 22SAU22A/ 22SSU22A/ 22DSU22A/ 22AIU22A	**DSE 3A:** UI/UX Design		3	2	50
	22CSU22B/ 22ITU22B/ 22CTU22B/ 22CAU22B/ 22SAU22B/ 22SSU22B/ 22DSU22B/ 22AIU22B	**DSE 3B:** Practical: UI/UX Design		2	2	50
	22CSU23A/ 22ITU23A/ 22CTU23A/ 22CAU23A/ 22SAU23A/ 22SSU23A	**DSE 3A:** Web Designing Using PHP		3	2	50
	22CSU23B/ 22ITU23B/ 22CTU23B/ 22CAU23B/ 22SAU23B/ 22SSU23B	**DSE 3B:** Practical: Web Designing Using PHP		2	2	50
4	22CSU27/ 22ITU27/ 22CTU27/ 22CAU27/ 22SAU27/ 22SSU27/ 22DSU27/ 22AIU27	**DSE 5:** Industrial Exposure Training	CS Dept	4 Weeks	5	100
5	22CSU24/ 22ITU24/ 22CTU24/ 22CAU24/ 22SAU24/ 22SSU24/ 22DSU24/ 22AIU24	**DSE 4:**Big Data Analytics	CS Dept	5	4	100
	22CSU25/ 22ITU25/ 22CTU25/ 22CAU25/ 22SAU25/ 22SSU25/	**DSE 4:** Block Chain and Crypto currency				

	22DSU25					
	22CSU26/ 22ITU26/ 22CTU26/ 22CAU26/ 22SAU26/ 22SSU26/ 22DSU26/ 22AIU26	**DSE 4:** Design Thinking Methodology				
6	22CSU28/ 22ITU28/ 22CTU28/ 22CAU28/ 22SAU28/ 22SSU28/ 22DSU28/ 22AIU28	**DSE 6:** Ethical Hacking	CS/ ICT/CA Dept	5	3	50
	22CSU30/ 22ITU30/ 22CTU30/ 22CAU30/ 22SAU30/ 22SSU30/ 22DSU30/ 22AIU30	**DSE 6:** Web Intelligence				
	22CSU44/ 22ITU44/ 22CTU44/ 22CAU44/ 22SAU44/ 22SSU44	**DSE 6:** Data Mining using R-				
7	22CSU29/ 22ITU29/ 22CTU29/ 22CAU29/ 22SAU29/ 22SSU29/ 22DSU29/ 22AIU29	**DSE 11:** Practical: Ethical Hacking	CS/ ICT/CA Dept	4	2	50
	22CSU31/ 22ITU31/ 22CTU31/ 22CAU31/ 22SAU31/ 22SSU31/ 22DSU31/ 22AIU31	**DSE 11:** Practical: Web Intelligence				
	22CSU45/ 22ITU45/ 22CTU45/ 22CAU45/ 22SAU45/ 22SSU45	**DSE 11:** Practical: Data Mining using R				

8	22CSU32/ 22ITU32/ 22CTU32/ 22CAU32/ 22SAU32/ 22SSU32/ 22DSU32/ 22AIU32	**DSE 7:** Wireless Technology	CA Dept	5	4	100
	22CSU33/ 22ITU33/ 22CTU33/ 22CAU33/ 22SAU33/ 22SSU33/ 22DSU33/ 22AIU33	**DSE 7:** Internet of Things				
	22CSU34/ 22ITU34/ 22CTU34/ 22CAU34/ 22SAU34/ 22SSU34	**DSE 7:** Cloud Computing				
9	22CSU35/ 22ITU35/ 22CTU35/ 22CAU35/ 22SAU35/ 22SSU35/ 22DSU35/ 22AIU35	**DSE 8:** Mobile Application Development	CT/CA Dept	4	3	100
	22CSU36/ 22ITU36/ 22CTU36/ 22CAU36/ 22SAU36/ 22SSU36/ 22DSU36/ 22AIU36	**DSE 8:** Linux Programming				
	22CSU37/ 22ITU37/ 22CTU37/ 22CAU37/ 22SAU37/ 22SSU37	**DSE 8:** Programming in C#. Net				
10	22CSU38/ 22ITU38/ 22CTU38/ 22CAU38/ 22SAU38/ 22SSU38/ 22DSU38/ 22AIU38	**DSE 9:**Practical: Mobile Application Development	CT/CA Dept	2	2	100
	22CSU39/ 22ITU39/					

	22CTU39/ 22CAU39/ 22SAU39/ 22SSU39 22DSU39/ 22AIU39	**DSE 9:** Practical: Linux Programming				
	22CSU40/ 22ITU40/ 22CTU40/ 22CAU40/ 22SAU40/ 22SSU40	**DSE 9:** Practical: C#. Net Programming				
11	22CSU41/ 22ITU41/ 22CTU41/ 22CAU41/ 22SAU41/ 22SSU41/ 22DSU41/ 22AIU41	**DSE 10:** Cognitive Computing	CS Dept	4	3	100
	22CSU42/ 22ITU42/ 22CTU42/ 22CAU42/ 22SAU42/ 22SSU42/ 22DSU42/ 22AIU42	**DSE 10:** Malware Analysis				
	22CSU43/ 22ITU43/ 22CTU43/ 22CAU43/ 22SAU43/ 22SSU43/ 22DSU43	**DSE 10:** Mobile Forensics				
				Total	**36**	**1000**

Industrial Exposure Training (IET):

Students can opt for Industrial Exposure Training during fifth semester for a period of 4 weeks; in such case one DSE course will be exempted.

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 Process	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 project report will be evaluated jointly by the internal and external examiners 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 Myklassroom 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 - 20 Marks**)

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

Generic Elective Courses are interdisciplinary in nature. They are additional courses based on expertise, specialization, requirements, scope, and need of the department. 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	SD/ EM/ EN	G/L/R/N
1	22GEU13	**GEC 1:** Mathematical Structures for Computer Science	II	Maths Dept	5	3	100	SD	G
	22GEU14	**GEC 1:** Discrete Mathematics						SD	G
2	22GEU18	**GEC 2:** Operations Research for Computer Studies	III	Maths Dept	5	3	100	EM	G
	22GEU19	**GEC 2:** Numerical Methods						EM	G

3	22GEU59	**GEC 3:** Embedded System	IV	ECS Dept	5	3	100	EM	G
	22GEU60	**GEC 3:** Robotics and Applications						EM	G
	22GEU61	**GEC 3:** PC Hardware						EN	G
4	22GEU107	**GEC 4:** Developing Thinking Skills	V	CS Dept/ CA Dept	2	2	50	EN	G
	22GEU108	**GEC 4:** Computational Thinking							
5	22GEU109	**GEC 5:** Cyber Ethics	VI	CS Dept/ Commerce Dept	3	3	50	EN	G
	22GEU110	**GEC 5:** Business Ethics & Corporate Social Responsibility							
Total						**14**	**400**		

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- ANCC		
S. No.	**Course Code**	**Course Name**
Semester I - ANCC I		
1.	22ANC01	Environmental Studies
Semester II - ANCC II - Values & Ethics		
2.	22ANC02	Human Rights
3.	22ANC03	Women's Rights
4.	22ANC04	Yoga for Human Excellence
5.	22ANC05	Indian Culture and Heritage
6.	22ANC06	Introduction to Cyber Security
7.	22ANC07	Consumer Protection
8.	22ANC08	Constitution of India
9.	22ANC09	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.	22ANC10	National Service Scheme
2.	22ANC11	National Cadet Corps
3.	22ANC12	Youth Red Cross

4.	22ANC13	Red Ribbon Club
5.	22ANC14	Rotaract Club
6.	22ANC15	Sports
7.	22ANC16	Association Activities
8.	22ANC17	Club Activities

Group 6.

i) Drive-Through Course (DTC)I & II– Additional Credits

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 opportunities to the students 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 statuary bodies.

ii) Drive-Through Course (DTC – III) – To be Completed

Internship Training/Mini Project/ Spoken Tutorial/Economic Talent test etc.

Students individually or with the maximum of four members per batch should take up either Internship training or mini project for a period of fifteen days during IV Semester vacation. The report will be evaluated and viva-voce examination will be conducted during 5th semester. Otherwise, the students have to complete one spoken tutorial course or any certification course suggested by the department.

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**	**Credits**	**SD/ EM/ EN**	**G/ L/ R/ N**
22AEC02/ 22AEC07/ 22AEC11/ 22AEC17/ 22AEC21	**AEC PART I: Language I:** Tamil-I – Tamizhum Ariviyalum/ Hindi - I/ French–I/ Malayalam–I Sanskrit – I	T	3	6	50	50	100	3	SD	L/ N/ G/ R

22AEC26	**AEC PART II: English I:** English for Professional Communication	T	3	6	50	50	100	3	SD	G
22CSU01/ 22ITU01/ 22CTU01/ 22CAU01/ 22SAU01/ 22SSU01/ 22DSU01/ 22AIU01	**DSC 1:** Digital Computer Fundamentals	T	3	4	50	50	100	4	SD	G
22CSU02A/ 22ITU02A/ 22CTU02A/ 22CAU02A/ 22SAU02A/ 22SSU02A/ 22DSU02A/ 22AIU02A	**DSC 2A:** Programming in C	E	2	3	25	25	50	2	SD/ EM	G
22CSU02B/ 22ITU02B/ 22CTU02B/ 22CAU02B/ 22SAU02B/ 22SSU02B/ 22DSU02B/ 22AIU02B	**DSC 2B:** Practical: C Programming		2	3	25	25	50	2	SD/ EM	G
22CSU16/ 22ITU16/ 22CTU16/ 22CAU16/ 22SAU16/ 22SSU16/ 22DSU16/ 22AIU16	**DSE 1:** Practical: Excel Macro	P	3	3	50	50	100	2	SD	G
22CSU17/ 22ITU17/ 22CTU17/ 22CAU17/ 22SAU17/ 22SSU17/ 22DSU17/ 22AIU17	**DSE 1:** Practical: Spreadsheet									
22AEC41	**AEC PART III:** Probability and Statistics	T	3	5	50	50	100	3	EM	G
DTC - I - Additional Credit Courses (NPTEL/Coursera)								4		
22ANC01	**ANCC-1 (NF2F)** Environmental Studies	T	-	2	-	-	Completed		SD	G
Total				**30+2**			**600**	**19 + 4**		

Semester II										
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**
22AEC04/ 22AEC08/ 22AEC12/ 22AEC18/ 22AEC22	**AEC PART I: Language II:** Tamil-II - Panpattu Padhivugalum Ariviyalalargalum/ Hindi-II/ French–II/ Malayalam-II/ Sanskrit – II	T	3	6	50	50	100	3	SD	L/ N/ G/ R
22AEC28	**AEC PART II: English II :** Campus to Corporate	T	3	6	50	50	100	3	SD	G
22AEC33	**AEC PART III:** Academic Skills for Computer Studies	T	3	3	50	50	100	3	SD	G
22CSU03/ 22ITU03/ 22CTU03/ 22CAU03/ 22SAU03/ 22SSU03/ 22DSU03/ 22AIU03	**DSC 3:** Data Structures and Algorithms	T	3	4	50	50	100	4	SD/ EM	G
22CSU04A/ 22ITU04A/ 22CTU04A/ 22CAU04A/ 22SAU04A/ 22SSU04A/ 22DSU04A/ 22AIU04A	**DSC 4A:** Object Oriented Programming using C++	E	3	3	25	25	50	2	SD/ EM	G
22CSU04B/ 22ITU04B/ 22CTU04B/ 22CAU04B/ 22SAU04B/ 22SSU04B/ 22DSU04B/ 22AIU04B	**DSC 4B:** Practical: C++ Programming		3	3	25	25	50	2	SD/ EM	G
22GEU13/ 22GEU14	**GEC I:** Mathematical Structures for Computer Science/Discrete Mathematics	T	3	5	50	50	100	3	SD	G

DTC II : Additional Credit Courses (NPTEL/Coursera)								4		
22ANC09	**ANCC-2 (NF2F) Value & Ethics:** Waste Management	T	-	2	-	-	Completed		EN	R
Total				**30+2**			**600**	**20 +4**		
Semester III										
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**
22AEC81/ 22AEC83/ 22AEC85	**AEC PART IV: Tamil III :** Neelakkurinchi/ **Hindi III :** Pryojanmoolak Hindi/ Advanced French-I	T	3	3	50	50	100	2	SD	L/ N/ G/ R
22AEC91	**AEC PART IV: English III:** Creative Writing	T	3	3	50	50	100	2	SD	G
22AEC53	**AEC Part V:** Capstone Project for Computer Studies	-	-	-	50	50	100	4	EN	G
22CSU05/ 22ITU05/ 22CTU05/ 22CAU05/ 22SAU05/ 22SSU05/ 22DSU05/ 22AIU05	**DSC 5:** Operating System	T	3	3	50	50	100	3	SD	G
22CSU06/ 22ITU06/ 22CTU06/ 22CAU06/ 22SAU06/ 22SSU06/ 22DSU06/ 22AIU06	**DSC 6:** Programming in Java	T	4	4	50	50	100	4	SD/ EM	G
22CSU07/ 22ITU07/ 22CTU07/ 22CAU07/ 22SAU07/ 22SSU07/ 22DSU07/ 22AIU07	**DSC 7:** Practical: Java Programming	P	3	3	50	50	100	3	SD/ EM	G

22CSU10A/ 22ITU10A/ 22CTU10A/ 22CAU10A/ 22SAU10A/ 22SSU10A/ 22DSU10A/ 22AIU10A	**DSC 10A:** Software Engineering and UML	E	2	3	25	25	50	3	SD/ EM	G
22CSU10B/ 22ITU10B/ 22CTU10B/ 22CAU10B/ 22SAU10B/ 22SSU10B/ 22DSU10B/ 22AIU10B	**DSC 10B:** Practical: Software Testing and UML		2	2	25	25	50	2	SD/ EM	G
22CSU11/ 22ITU11/ 22CTU11/ 22CAU11/ 22SAU11/ 22SSU11/ 22DSU11/ 22AIU11	**DSC 11:** Computer Networks	T	3	4	50	50	100	4	SD/ EM	G
22GEU18/ 22GEU19	**GEC 2:** Operations Research for Computer Studies/ Numerical Methods	T	3	5	50	50	100	3	SD/ EM	G
Total				**30**			**900**	**30**		

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**
22AEC82/ 22AEC84/ 22AEC86	**AEC PART IV Tamil IV :**Semmullai/ **Hindi IV :** Takneeki Hindi Basha/ Advanced French-II	T	3	3	50	50	100	2	SD	L/ N/ G/ R
22AEC92	**AEC PART IV English IV :** English for Digital Media	T	3	3	50	50	100	2	SD	G
22CSU08/ 22ITU08/ 22CTU08/ 22CAU08/ 22SAU08/	**DSC 8:** Relational Database Management Systems	T	3	5	50	50	100	5	SD	G

22SSU08/ 22DSU08/ 22AIU08										
22CSU09/ 22ITU09/ 22CTU09/ 22CAU09/ 22SAU09/ 22SSU09/ 22DSU09/ 22AIU09	**DSC 9:** Practical: SQL and PL/SQL	P	3	4	50	50	100	2	EM	G
22CSU18/ 22ITU18/ 22CTU18/ 22CAU18/ 22SAU18/ 22SSU18/ 22DSU18/ 22AIU18	**DSE 2:** Computer Forensics	T	3	5	50	50	100	4	SD/ EM	G
22CSU19/ 22ITU19/ 22CTU19/ 22CAU19/ 22SAU19/ 22SSU19/ 22DSU19	**DSE 2:** Green Computing									
22CSU20/ 22ITU20/ 22CTU20/ 22CAU20/ 22SAU20/ 22SSU20/ 22DSU20/ 22AIU20	**DSE 2:** Cyber Threat Intelligence									
22CSU21A/ 22ITU21A/ 22CTU21A/ 22CAU21A/ 22SAU21A/ 22SSU21A/ 22DSU21A/ 22AIU21A	**DSE 3A:** VB .NET	E	3	3	25	25	50	2	EN/ EM	G
22CSU21B/ 22ITU21B/ 22CTU21B/ 22CAU21B/ 22SAU21B/ 22SSU21B/ 22DSU21B/ 22AIU21B	**DSE 3B: Practical: VB .NET**		3	2	25	25	50	2	EN/ EM	G
22CSU22A/ 22ITU22A/ 22CTU22A/ 22CAU22A/ 22SAU22A/ 22SSU22A/	**DSE 3A:** UI/UX Design	E	3	3	25	25	50	2	EN/ EM	G

22DSU22A/ 22AIU22A										
22CSU22B/ 22ITU22B/ 22CTU22B/ 22CAU22B/ 22SAU22B/ 22SSU22B/ 22DSU22B/ 22AIU22B	**DSE 3B:**Practical: UI/UX Design		3	2	25	25	50	2	EN/ EM	G
22CSU23A/ 22ITU23A/ 22CTU23A/ 22CAU23A/ 22SAU23A/ 22SSU23A	**DSE 3A:** Web Designing Using PHP	E	3	3	25	25	50	2	EN/ EM	G
22CSU23B/ 22ITU23B/ 22CTU23B/ 22CAU23B/ 22SAU23B/ 22SSU23B	**DSE 3B:** Practical: Web Designing Using PHP		3	2	25	25	50	2	EN/ EM	G
22GEU59/ 22GEU60/ 22GEU61	**GEC 3:** Embedded System/ Robotics and Applications/ PC Hardware	T	3	5	50	50	100	3	EM	G
Total				**30**			**700**	**22**		
Semester V										
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**
22CSU27/ 22ITU27/ 22CTU27/ 22CAU27/ 22SAU27/ 22SSU27/ 22DSU27/ 22AIU27	**DSE 5:** Industrial Exposure Training	-	3	4 Weeks	50	50	100	5	EN	G
22CSU12/ 22ITU12/ 22CTU12/ 22CAU12/ 22SAU12/ 22SSU12/ 22DSU12	**DSC12:** Artificial Intelligence	T	3	5	50	50	100	4	SD	G

22AIU12										
22CSU13/ 22ITU13/ 22CTU13/ 22CAU13/ 22SAU13/ 22SSU13/ 22DSU13/ 22AIU13	**DSC 13:** Machine Learning using Python	T	3	5	25	25	50	4	SD/ EM	G
22CSU46/ 22ITU46/ 22CTU46/ 22CAU46/ 22SAU46/ 22SSU46/ 22DSU46/ 22AIU46	**DSC 16:** Practical: Machine Learning using Python	P	3	4	25	25	50	2	SD/ EM	G
22CSU28/ 22ITU28/ 22CTU28/ 22CAU28/ 22SAU28/ 22SSU28/ 22DSU28/ 22AIU28	**DSE 6:** Ethical Hacking	T	3	5	25	25	50	3	EN	G
22CSU30/ 22ITU30/ 22CTU30/ 22CAU30/ 22SAU30/ 22SSU30/ 22DSU30/ 22AIU30	**DSE 6:** Web Intelligence									
22CSU44/ 22ITU44/ 22CTU44/ 22CAU44/ 22SAU44/ 22SSU44	**DSE 6:** Data Mining using R									
22CSU29/ 22ITU29/ 22CTU29/ 22CAU29/ 22SAU29/ 22SSU29/ 22DSU29/ 22AIU29	**DSE 11:** Practical: Ethical Hacking	P	3	4	25	25	50	2	EN	G
22CSU31/ 22ITU31/ 22CTU31/ 22CAU31/ 22SAU31/ 22SSU31	**DSE 11:** Practical: Web Intelligence									

22DSU31/ 22AIU31										
22CSU45/ 22ITU45/ 22CTU45/ 22CAU45/ 22SAU45/ 22SSU45	**DSE 11:** Practical: Data Mining using R									
22CSU24/ 22ITU24/ 22CTU24/ 22CAU24/ 22SAU24/ 22SSU24/ 22DSU24/ 22AIU24	**DSE 4:** Big Data Analytics	T	3	5	50	50	100	4	SD/ EM	G
22CSU25/ 22ITU25/ 22CTU25/ 22CAU25/ 22SAU25/ 22SSU25/ 22DSU25	**DSE 4:** Block Chain and Cryptocurrency									
22CSU26/ 22ITU26/ 22CTU26/ 22CAU26/ 22SAU26/ 22SSU26/ 22DSU26/ 22AIU26	**DSE 4:** Design Thinking Methodology									

22CSU47/ 22ITU47/ 22CTU47/ 22CAU47/ 22SAU47/ 22SSU47/ 22DSU47/ 22AIU47/ 22CSU48/ 22ITU48/ 22CTU48/ 22CAU48/ 22SAU48/ 22SSU48/ 22DSU48/ 22AIU48/ 22CSU49/ 22ITU49/ 22CTU49/ 22CAU49/ 22SAU49/ 22SSU49/ 22DSU49/ 22AIU49	**Drive Through Course III – Internship/ Mini Project/ Spoken Tutorial**	Completed								
22GEU107/ 22GEU108	**GEC 4:** Developing Thinking Skills/ Computational Thinking	T	3	2	25	25	50	2	SD	G
Total				**30**			**550**	**26**		
Semester VI										
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**
22GEU109/ 22GEU110	**GEC 5:** Cyber Ethics/ Business Ethics & Corporate Social Responsibility	T	3	3	25	25	50	3	SD	G
22CSU14/ 22ITU14/ 22CTU14/ 22CAU14/ 22SAU14/ 22SSU14/ 22DSU14/ 22AIU14	**DSC 14:** Major Project	-	3	6	50	50	100	4	EN	G

22CSU15A/ 22ITU15A/ 22CTU15A/ 22CAU15A/ 22SAU15A/ 22SSU15A	**DSC15A:** Visualization Analysis and Design	E	3	3	25	25	50	2	SD	G
22CSU15B/ 22ITU15B/ 22CTU15B/ 22CAU15B/ 22SAU15B/ 22SSU15B	**DSC15B:** Practical: Data Visualization Techniques		3	3	25	25	50	2	SD	G
22CSU35/ 22ITU35/ 22CTU35/ 22CAU35/ 22SAU35/ 22SSU35/ 22DSU35/ 22AIU35	**DSE 8:** Mobile Application Development	T	3	4	50	50	100	3	EN	G
22CSU36/ 22ITU36/ 22CTU36/ 22CAU36/ 22SAU36/ 22SSU36/ 22DSU36/ 22AIU36	**DSE 8:** Linux Programming									
22CSU37/ 22ITU37/ 22CTU37/ 22CAU37/ 22SAU37/ 22SSU37	**DSE 8:** Programming in C#.Net									
22CSU38/ 22ITU38/ 22CTU38/ 22CAU38/ 22SAU38/ 22SSU38/ 22DSU38/ 22AIU38	**DSE 9:** Practical: Mobile Application Development	P	3	2	50	50	100	2	EN	G
22CSU39/ 22ITU39/ 22CTU39/ 22CAU39/ 22SSU39 22DSU39/ 22AIU39	**DSE 9:** Practical: Linux Programming									
22CSU40/ 22ITU40/ 22CTU40/ 22CAU40/	**DSE 9:** Practical: C#. Net Programming									

22SAU40/ 22SSU40										
22CSU32/ 22ITU32/ 22CTU32/ 22CAU32/ 22SAU32/ 22SSU32/ 22DSU32/ 22AIU32	**DSE 7:** Wireless Technology	T	3	5	50	50	100	4	SD/ EM	G
22CSU33/ 22ITU33/ 22CTU33/ 22CAU33/ 22SAU33/ 22SSU33/ 22DSU33/ 22AIU33	**DSE 7:** Internet of Things									
22CSU34/ 22ITU34/ 22CTU34/ 22CAU34/ 22SAU34/ 22SSU34	**DSE 7:** Cloud Computing									
22CSU41/ 22ITU41/ 22CTU41/ 22CAU41/ 22SAU41/ 22SSU41/ 22DSU41/ 22AIU41	**DSE 10:** Cognitive Computing	T	3	4	50	50	100	3	SD/ EM	G
22CSU42/ 22ITU42/ 22CTU42/ 22CAU42/ 22SAU42/ 22SSU42/ 22DSU42/ 22AIU42	**DSE 10:** Malware Analysis									
22CSU43/ 22ITU43/ 22CTU43/ 22CAU43/ 22SAU43/ 22SSU43/ 22DSU43	**DSE 10:** Mobile Forensics									
22ANC10	**ANCC-III (NF2F):** Extension Activities: National Service Scheme	-	3	-	-	-	Grade	-	SD	N
22ANC11	National Cadet Corps									

22ANC12	Youth Red Cross									
22ANC13	Red Ribbon Club									
22ANC14	Rotaract Club									
22ANC15	Sports									
22ANC16	Association Activities									
22ANC17	Club Activities									
Total				**30**			**650**	**23**		
	Total						**4000**	**140 +8**		
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			

The Courses focuses the following needs :				
Needs	**G- Global**	**N –Regional**	**R-Regional**	**L-Local**
SD	Skill Development			
EM	Employability			
EN	Entrepreneurship			

Semester-wise Distribution of Marks and Credits:

Semester	Total Marks	Total Credits
I	600	19+4
II	600	20+4
III	900	30
IV	700	22
V	550	26
VI	650	23
Total	**4000**	**140+8**

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	22AEC41	**AEC PART III:** Probability and Statistics	B.Sc IT	T	5	50	50	100	3
2	22GEU12	**GEC I:** Mathematical Foundation for Computer Science	B.Sc IT	T	5	50	50	100	3
3	22GEU16	**GEC I:** Discrete Mathematics	B.Sc IT	T	5	50	50	100	3
4	22GEU13	**GEC 2:** Operations Research for Computer Studies	B.Sc IT	T	5	50	50	100	3
5	22GEU14	**GEC 2:** Numerical Method	B.Sc IT	T	5	50	50	100	3

List of Courses Offered by Electronics and Communication Department

Semester	Course Code	Course Name	Programme	T/P/E	Ins. hrs	CIA	ES	Total Marks	Credit
I	22GEU59	**GEC 3:** Embedded System	B.Sc IT	T	5	50	50	100	3
2	22GEU60	**GEC 3:** Robotics and Applications	B.Sc IT	T	5	50	50	100	3
3	22GEU61	**GEC 3:** PC Hardware	B.Sc IT	T	5	50	50	100	3

List of Courses Offered by Management Science Department

Semester	Course Code	Course Name	Programme	T/P/E	Ins. hrs	CIA	ES	Total Marks	Credit
I	22GEU96	**GEC 5:** Organizational Behaviour	B.Sc IT	T	5	50	50	100	4
2	22GEU97	**GEC 5:** Human Resource Management	B.Sc IT	T	5	50	50	100	4
3	22GEU98	**GEC 5:** Management Information System	B.Sc IT	T	5	50	50	100	4

OFFERED TO

Semester	Course Code	Course Name	Programme	T/P/E	Ins. hrs	CIA	ES	Total Marks	Credit
II	22GEU52	Practical: Office Automation Lab	BA English Literature	P	4	50	50	100	3
II	22GEU53	Practical: Access Lab	BA English Literature	P	4	50	50	100	3

Amendments :

- As per Bharathiar University regulation
  - 22AEC81 - Tamil III – Neelakkurinchi /Hindi III - 22AEC83-Pryojanmoolak Hindi/22AEC85-Advanced French-I is included in 3rd semester.
  - 22AEC91 - English III: Creative Writing is included in 3rd semester.
  - 22AEC82 - Tamil IV – Semmullai / 22AEC84 - Hindi IV - Takneeki Hindi Basha/22AEC86-Advanced French-II is included in 4th semester.
  - 22AEC92 - English IV: English for Digital Media is included in 4th semester.
- The following course has been moved to 3rd semester from 4th semester
  - DSC10A: Software Engineering & DSC10B: Practical: Software Testing using Selenium has been renamed as DSC10A: Software Engineering and UML & DSC10B - Practical: Software testing and UML
  - DSC 11: Computer Networks

- 22AEC53 - Capstone Project for Computer Studies

- The following course has been moved to 4th semester from 3rd semester
  - DSC 8: Relational Database Management Systems
  - DSC 9: Practical: SQL and PL/SQL
  - DSE 2: Computer Forensics/Green Computing/Cyber Threat Intelligence

- The following course has been moved to 5th semester from 4th semester
  - DSE 4: Big Data Analytics/Block Chain and Cryptocurrency/Design Thinking Methodology

- The following course has been moved to 6th semester from 5th semester
  - DSE 7: Wireless Technology/Internet of Things/Cloud Computing

- The course DSE3A : PHP and MySQL & DSE3B : Practical :PHP and MySQL has been renamed as Web Designing using PHP and Practical : Web Designing using PHP

- The following DSE courses are dropped in Semester V.
  - DSE 5A : System Modeling using UML
  - DSE 5B : Practical :System Modeling using UML
- The following DSE courses are dropped in Semester VI
  - 22GEU96 - Organizational Behavior/22GEU97-Human Resource management
    /22GEU98-Management Information System

- The instructional hours for
  - DSC 5: Operating Systems has been changed to 3
  - DSC 6: Programming in Java is changed as 4
  - DSC 9: Practical: SQL and PL/SQL is changed as 4
  - DSC 12: Artificial Intelligence & DSC 13A: Machine Learning using Python is updated from 4 hours to 5 hours.

- DSC 13B: Practical: Machine Learning using Python is updated from 3 to 4 hours

- The DSE6A & DSE6B, DSE11A & DSE11B embedded course is converted as individual theory DSE6 and practical DSE11 course.

- The following changes were carried out,
  - DSE 6: Ethical Hacking, DSE 6: Web Intelligence, DSE 6: Data Mining using R is updated from 3 to 5
  - DSE 11: Practical: Ethical Hacking, DSE 11: Practical: Web Intelligence, DSE 11: Practical: Data Mining using R is updated from 3 to 4

- 22AEC48 AEC Part III: Developing Thinking Skills is changed as 22GEU107-Developing Thinking Skills/ 22GEU108-Computational Thinking and the instructional hour updated from 3 to 2. The credit has been changed to 2 from 3.
- 22AEC61 AEC Part IV: Cyber Ethics is changed as 22GEU109-Cyber Ethics / 22GEU110-Business Ethics & Corporate Social Responsibility
- The embedded course DSC 15A**:** Data Analytics using PySpark & DSC 15B: Practical: Data Analytics using PySpark has been replaced with DSC 15A: Visualization Analysis and Design & DSC 15B: Practical: Data Visualization Techniques.

Amendments:

Board of Studies meeting 8 th November, 2023

2022 Batch B.Sc. CS/ BCA/ B.Sc. IT/ B.Sc. CT/8.Sc. CSA/ B.Sc. SS Programme

The following DSE courses have been dropped in the IV Semester:

- DSE 3: 22CSU21/ 22ITU21/ 22CTU21/ 22CAU21/ 22SAU21/ 22SSU21/ 22DSU21/ 22AIU21 - Computer Vision
- DSE 3: 22CSU22/ 22ITU22 /22CTU22 /22CAU22 /22SAU22/ 22SSU22 I 22DSU22 I 22AIU22 - Search Engine Optimization

The following DSE courses have been introduced in the IV Semester:

- DSE 3A: 22CSU21A / 22ITU21A / 22CTU21A / 22CAU21A/ 22SAU21A / 22SSU21A /22DSU21A / 22AIU21A - VB .NET
- DSE 38: 22CSU21B /22ITU21B/ 22CTU21B/ 22CAU21B/ 22SAU21 B/ 22SSU21 B/22DSU21 B/ 22AIU21 B- Practical: VB .NET
- DSE 3A: 22CSU22A/ 22ITU22A/ 22CTU22A/ 22CAU22A/ 22SAU22A/ 22SSU22A/ 22DSU22A/ 22AIU22A- UI/UX Design
- DSE 38: 22CSU22B /22ITU22B/ 22CTU22B/ 22CAU22B/ 22SAU22B/ 22SSU22B/ 22DSU22B / 22AIU22B - Practical: UI/UX Design