SRI KRISHNA ARTS AND SCIENCE COLLEGE

An Autonomous College Affiliated to Bharathiar University

Coimbatore - 641008, Tamil Nadu, India.

LEARNING OUTCOMES BASED CURRICULUM FRAMEWORK (LOCF)

M.Sc. Information Technology

(I to IV Semester)

for 2022-23 admitted students

DEPARTMENT OF ICT & COGNITIVE SYSTEMS

SRI KRISHNA ARTS AND SCIENCE COLLEGE
COIMBATORE – 641008

DEPARTMENT OF ICT & COGNITVE SYSTEMS

I. Programme Educational Objectives (PEOs)

Post Graduates from the **Information Technology** Programme are expected to achieve the following PEOs within two years of graduation

PEO 1	Become next generation technology leaders with modern IT and research skills.
PEO 2	Develop as a team leader capable of solving complex problems with current domain knowledge and effective communicative skills.
PEO 3	Practice lifelong learning to solve real time problems in career development.
PEO 4	Develop professional skills to meet the global standards with ethical and social responsibility.

II. Programme Learning Outcomes (PLOs)

The following Programme Learning Outcomes have been identified for **M.Sc. Information Technology**:

PLO 1	**Knowledge:**Develop an ability to apply knowledgeof computing and mathematics appropriate to the discipline. ***(Cognitive)***
PLO 2	**Critical Thinking Skills:**Gain analytical thinking skillsin the areas of technology that helps to design, implement, and evaluate a computational system to meet desired needs within realistic constraints. ***(Cognitive)***
PLO 3	**Practical Skills:**Demonstrate ability to adapt and incur the current industry techniques and new competencies to handle computing practicein real time applications. ***(Psychomotor)***
PLO 4	**Team-workSkills:**Acquire the spirit of compassion and commitment that function effectively on teams to accomplish shared computing design, evaluation and implementation goals. ***(Affective)***

PLO 5	**Communication Skills:**Apply scientific approach and capability to undertake responsibilities for sustainable growth in industry and technology by ensuring effective communication with diverse stakeholders. ***(Affective)***
PLO 6	**Digital Skills:**Enhance and utilize the recent digital tools and techniquesin designing software products, prototypes and solutions for effective progression of computing at the Global arena. ***(Affective)***
PLO 7	**Numeracy Skills:** apply quantitative, numerical and statistical skillsthrough professional standards for resolving relevant industrial computational problems. ***(Cognitive)***
PLO 8	**Leadership Skills:**Function effectively as part of a team to develop and deliver quality software artifacts in multidisciplinary domains. ***(Affective)***
PLO 9	**Lifelong Learning Skills:**Explore historical, current, and emerging techniques and technologies, founded on a commitment to lifelong learningand professional development. ***(Affective)***
PLO 10	**Entrepreneurial Skills:**Enhance entrepreneurial skills for making the students to undertake independent ventures and understand the impact of professional business solutions for sustainable development. ***(Affective)***
PLO 11	**Ethics &Professional Skills:** Progressively design computing solutions using approaches that integrate ethical, social, legal, and economic responsibilities.***(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. Mapping of PEOs and PLOs

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11
PEO1	3		3			3					
PEO2		3					3				
PEO3				3				3		2	3
PEO4					3				2		

V. Additional Programme Outcomes (APOs)

The Additional Programme Outcomes for **M.Sc. Information Technology** are:

APO 1	The students will have an ability to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
APO 2	They will be having an ability to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
APO 3	They will have an ability to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
APO 4	They will function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
APO 5	They will communicate effectively in a variety of professional contexts.

VI. Programme Specific Outcomes (PSOs)

On the completion of M.Sc., **Information Technology**, the graduates will able to

PSO 1	Design, Build and maintain projects with ability to practice and improve as computer professionals.
PSO 2	Ability to utilize Computing knowledge and skills for the betterment of society.

VII. Curriculum Structure for M.Sc., Information Technology

Course Components, Credits & Marks Distribution

Course Type	Number of Courses	Credits per Course	Total Credits	Marks	Semester
Discipline Specific Courses (DSC)	18	2-8	70	1750	I to IV
Discipline Specific Elective Courses (DSE)	3	4	12	300	II & III
Generic Electives Courses (GEC)	3	2-4	8	200	II & III
DTC – Drive Through Courses (SWAYAM-NPTEL, Coursera, Any courses certified by statutory bodies, etc.)	Additional 4 Credits per Course will be given on submission of Certificate				I to IV
Total			**90**	**2250**	

1. Discipline Specific Courses (DSC)

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

S. No.	Course Code	Course Title	Semester	Contact Hours	Credits	Marks
1	22CSP01/ 22ITP01 / 22CTP01	**DSC-I**: Advanced Java Programming	I	5	4	100
2	22ITP02	**DSC-II**: Software Engineering	I	5	4	100
3	22CSP03/ 22ITP03 / 22CTP03	**DSC-III**: Design and Analysis Of Algorithms	I	5	4	100
4	22CSP04/ 22ITP04 / 22CTP04	**DSC Practical-I:** Advanced Java Lab	I	5	4	100
5	22CSP05/ 22ITP05 / 22CTP05	**DSC-IV**: Data Mining	I	5	4	100
6	22CSP06/ 22ITP06 /	**DSC- V**: Cryptography and	II	5	4	100

	22CTP06	Network Security				
7	22CSP07/ 22ITP07 / 22CTP07	**DSC-VI**: Internet of Things	II	5	4	100
8	22CSP08 / 22ITP08	**DSC-VII**: Compiler Design	II	5	4	100
9	22CSP09/ 22ITP09 / 22CTP09	**DSC Practical-II**: Cryptography and Network Security Using NS3	II	3	3	100
10	22CSP10/ 22ITP10 / 22CTP10	**DSC-VIII**: Digital Image Processing	III	5	4	100
11	22CSP11/ 22ITP11 / 22CTP11	**DSC-IX**: Python for Data Science	III	5	4	100
12	22CSP12/ 22ITP12 / 22CTP12	**DSC Practical-III**: Image Processing Lab	III	4	4	100
13	22CSP13/ 22ITP13 / 22CTP13	**DSC Practical-IV**: Practical –Data Science Lab Using Python	III	4	3	100
14	22CSP14/ 22ITP14 / 22CTP14	**DSC-X:** Artificial Intelligence	III	4	4	100
15	22CSP15/ 22ITP15	**DSC Practical-V**: Self Study Paper–Software Testing using Selenium	III	-	2	50
16	22CSP16/ 22ITP16 / 22CTP16	**DSC-XI:** Mini Project	III	-	3	50
17	22ITP17 / 22CTP17	**DSC Practical-VI:** Web Technologies (Open Book)	IV	3	3	50
18	22CSP18 / 22ITP18 / 22CTP18	**DSC-XII**: Project	IV	-	8	200
Total					**70**	**1750**

Project Work

During the fourth semester, each of the students has to undertake a Project Work individually. A guide will be allotted to each student by the department. Student can select any relevant topic in discussion with the guide. The project report shall be subject to internal

evaluation followed by a viva-voce. The project should be demonstrated at the time of examination.

3 Reviews	– 50 Marks
Report	– 30 Marks
Attendance	– 20 Marks
Total	– 100 Marks.

End Semester Viva-Voce will be conducted for 100 (External) Marks.
(Dissertation - 60 Marks & Viva-voce - 40 Marks)

2. Discipline Specific Electives (DSE) (3 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 THREE courses from the following list.

Students can opt one course from each group.

S. No.	Course Code	Course Title	Semester	Contact Hours	Credits	Marks
1	22CSP21/ 22ITP21/ 22CTP21	**DSE I:**Cloud Services / Data Science and Big Data Analytics	II	5	4	100
2	22CSP22/ 22ITP22/ 22CTP22	**DSE II:**Dot Net Programming/ Database Technologies-Oracle/Mobile Communication Systems	III	4	4	100
3	22CSP23/ 22ITP23/ 22CTP23	**DSE Practical:** Dot Net Programming Lab/Oracle Lab/ Android Programming Lab	III	4	4	100
Total				**13**	**12**	**300**

3. Generic Elective Courses (GEC) (3 Courses)

Generic Elective Courses are interdisciplinary in nature. They are additional courses based on expertise, specialization, requirements, scope, and need of the department. The students will have the choice of taking THREE GECs.

List of Courses Offered by ITDepartment

Group	Course Code	Course Title	Semester	Contact Hours	Credits	Marks
I	22GEP12	Android Programming	II	4	3	50
	22GEP14	LINUX and Shell Programming	III	4	3	50
	22GEP16	LINUX and Android Programming Lab	IV	3	2	100
II	22GEP13	Introduction to Data Analytics	II	4	3	50
	22GEP15	R Programming	III	4	3	50
	22GEP17	R Programming Lab	IV	3	2	100
Total					**16**	**400**

4. Drive ThroughCourse (DTC)

i. (DTC) I & II– Online Certification - 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.

a. SWAYAM-NPTEL
b. Coursera
c. Any courses certified by statuary bodies.

ii. (DTC – III) – Article Publication - To be Completed -

Students individually or with the maximum of four members per batch are asked to publish article in Scopus or Web of Science Journals (Or) publish book chapters.Additional 4 credits per Course will be given on submission of proof of the published paper (or) book chapter.