

Curriculum Framework under Choice Based Credit System (CBCS) and

Syllabus for Outcome Based Education (OBE) in

BACHELOR OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

(B.Sc AI&ML) Degree Programme

For the students admitted from the academic year 2023– 24



SREE SARASWATHI THYAGARAJA COLLEGE

An Autonomous, NAAC Re-Accredited with 'A+' Grade, ISO 21001:2018

Certified Institution, Affiliated to Bharathiar University, Coimbatore, Approved by

AICTE for MBA/MCA and by UGC for 2(f) & 12(B) status

Palani Road, Pollachi-642107, Coimbatore Dist, Tamilnadu Email:

stc@stc.ac.in Website: www.stc.ac.in

SREE SARASWATHI THYAGARAJA COLLEGE [AUTONOMOUS], POLLACHI

B.Sc(AI&ML)Degree Programme PEO, PO and PSO

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

Within three years of obtaining B.Sc. degree in Artificial Intelligence and Machine Learning, the Graduate will be able to

PEO1: To practice their profession with confidence by applying new ideas and technologies in the domain of Artificial Intelligence and Machine Learning for the sustainable growth of Industry and Society.

PEO2: To pursue higher studies for professional growth with superior ethics and character.

PEO3: To engage in research leading to innovations / products or become a successful Entrepreneur.

PROGRAMME OUTCOMES (POS)

At the completion of the programme the graduates will be able to

PO1: Design solutions for complex 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.

PO2: 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.

PO3: Create, select, and apply appropriate techniques, resources, and modern tools including prediction and modelling to complex activities with an understanding of the limitations.

PO4: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

PO5: Apply ethical principles and commit to professional ethics and responsibilities and norms of the real time practice.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

At the completion of the programme, the Graduates will be able to

PSO1: Demonstrate the knowledge of human cognition, Artificial Intelligence, Machine Learning and data engineering for designing intelligent systems.

PSO2: Apply computational knowledge and project development skills to provide innovative solutions.

PSO3: Use tools and techniques to solve problems in AI and ML.

Mapping the Pos with PEO

POs/PEOs	PEO1	PEO2	PEO3
PO1	S	S	M
PO2	S	M	S
PO3	S	L	S
PO4	S	M	M
PO5	M	S	M

S-Strong; L-Low; M-Medium

Mapping the PSOs with PEO

PSOs/PEOs	PEO1	PEO2	PEO3
PSO1	S	L	M
PSO2	M	L	S
PSO3	S	L	M

S-Strong; L-Low; M-Medium

For B.Sc (AI&ML) programme, a student must earn 140 credits as mentioned in the below table.

B.Sc(AI&ML)2023-2024

Summary of Courses Pattern and Credit Distribution in Choice Based Credit System

Part	Curriculum Structure	No. of Courses	Credits to be earn
I	Languages	4	12
II	English	4	12
III	Core(Major)Courses	20	72
	Allied Courses(GE)	4	12
	Core Electives(DC)	4	12
IV	Non-Major Electives (NME)	2	4
	Value Based Courses(VBC)	2	4
	Soft Skills(AECC)	2	4
	Skill Enhancement Courses(SEC)	4	8
V	Extension Activities	1	Grade
Total		47	140
Extra Credit Courses:			
ExtraCreditCourse–1 (MOOC)		2	4
GRAND TOTAL:			144

AI&ML-Scheme of Examination(Student admitted from 2023-24 onwards)

Semester I											
Part		Course Type	Course Code	Name of the course	Period per Week			CIA	ESE	Total	Credit
					L	P	T				
I	Language -1	Theory	23LAN1T10/ 23LAN1H10/ 23LAN1M10/ 23LAN1F10/ 23LAN1S10	Language-I (Tamil/ Hindi/ Malayalam/ /French/Sanskrit)	4	-	-	25	75	100	3
II	English	Theory	23LAN1E10	General English-I	4	-	-	25	75	100	3
III	CC-I	Theory	23BAM1C10	Programming in C	5	-	-	25	75	100	4
III	CC-II	Lab	23BAM1C20	Programming in C Lab	-	4	-	40	60	100	2
III	CC-III	Theory	23BAM1C30	Data Structures and Algorithms	5	-	-	25	75	100	4
III	GE1	Theory	23BMAGGB0	Introduction to Linear Algebra	4	-	-	25	75	100	3
IV	NME-I			NME	2	-	-	-	75	75	2
IV	AECC-I	Theory	23AECCSS10	Soft Skill-I	2	-	-	50	-	50	2
				Total for Semester-I	30			215	510	725	23
Semester II											
I	Language-2	Theory	23LAN2T10/ 23LAN2H10/ 23LAN2M10/ 23LAN2F10/ 23LAN2S10	Language-II (Tamil/ Hindi/ Malayalam/ /French/Sanskrit)	4	-	-	25	75	100	3
II	English-2	Theory	23LAN2E10	General English-II	4	-	-	25	75	100	3
III	CC-IV	Theory	23BAM2C10	Java Programming	5	-	-	25	75	100	4
III	CC-V	Lab	23BAM2C20	Java Programming Lab	-	4	-	40	60	100	2
III	CC-VI	Theory	23BAM2C30	Artificial Intelligence & Knowledge Representation	5	-	-	25	75	100	4
III	GE2	Theory	23BMAGGG0	Operations Research	4	-	-	25	75	100	3
III	NME-II	Theory		NME	2	-	-	-	75	75	2
IV	AECC-II	Theory	23AECCSS20	Soft Skill-II	2	-	-	50	-	50	2
				Total for Semester-II	30			215	510	725	23
Semester III											
I	Language -3	Theory	24LAN3T10/ 24LAN3H10/ 24LAN3M10/ 24LAN3F10/ 24LAN3S10	Language-III (Tamil/ Hindi/ Malayalam/ /French/Sanskrit)	4	-	-	25	75	100	3
II	English-3	Theory	24LAN3E10	General English-III	4	-	-	25	75	100	3
III	CC VII	Theory	24BAM3C10	Introduction to Database Management System	4	-	-	25	75	100	4
III	CC VIII	Theory	24BAM3C20	Python Programming	5	-	-	25	75	100	5

III	CC IX	Practical	24BAM3C30	Python Programming Lab	-	4	-	40	60	100	3
III	GE-3	Theory	24BAM3G10	Operating System	3	-	-	25	75	100	3
IV	SEC1	Practical	24BAM3S10	Database Management System Lab	-	4	-	30	45	75	2
IV	VBC 1	Theory	23DHE3V10	Value Education & Human Rights	2	-	-	50	-	50	2
	ECC			NPTEL	-	-	-	-	-	-	2*
				Total for Semester – III	30			245	480	725	25+2*
Semester IV											
I	Language -4	Theory	24LAN4T10/ 24LAN4H10/ 24LAN4M10/ 24LAN4F10/ 24LAN4S10	Language-IV (Tamil/ Hindi/ Malayalam/ /French/Sanskrit)	4	-	-	25	75	100	3
II	English-4	Theory	24LAN4E10	General English -IV	4	-	-	25	75	100	3
III	CC X	Theory	24BAM4C10	R Programming	5	-	-	25	75	100	5
III	CC XI	Practical	24BAM4C20	R Programming with Data Visualization Lab	-	4	-	40	60	100	3
III	CC XII	Theory	24BAM4C30	Machine Learning Techniques	4	-	-	25	75	100	4
III	GE-4	Theory	24BAM4G10	Cloud Computing	3	-	-	25	75	100	3
IV	SEC2	Practical	24BAM4S10	Computational Intelligence Lab	-	4	-	30	45	75	2
IV	VBC 2	Theory	23DHE4V10	Environmental Studies	2	-	-	50	-	50	2
	ECC			NPTEL	-	-	-	-	-	-	2*
				Total for Semester – IV	30			245	480	725	25+2*
Semester V											
III	CC XIII	Theory	24BAM5C10	Deep Learning	5	-	-	25	75	100	5
III	CC XIV	Practical	24BAM5C20	Deep Learning Lab	-	6	-	25	75	100	3
III	CC XV	Theory	24BAM5C30	Internet of Things	4	-	-	25	75	100	4
IV	CC XVI	Project	24BAM5R10	Minor Project Work Lab	-	4	-	20	30	50	2
III	DC1	Theory	24BAM5E10	Core Elective – I	3	-	-	25	75	100	3
III	DC2	Theory	24BAM5E20	Core Elective – II	3	-	-	25	75	100	3
IV	SEC3	Practical	24BAM5S10	Internet of Things Lab	-	4	-	30	45	75	2
V	EAC		24ETN5X10	Extension Activity – National Service Scheme/ Sports/NCC	Grade			-	-	-	-
				Total for Semester – V	29			175	450	625	22
Semester VI											
III	CC XVII	Theory	24BAM6C10	Natural Language Processing	5	-	-	25	75	100	5
III	CC XVIII	Practical	24BAM6C20	Natural Language Processing Lab	-	4	-	40	60	100	2
III	CC XIX	Theory	24BAM6C30	Principles of Robotics	4	-	-	25	75	100	4
III	CCXX	Project	24BAM6C40	Major Project Work Lab	6	-	-	40	60	100	3
III	DC3	Theory	24BAM6E10	Core Elective – III	3	-	-	25	75	100	3
III	DC4	Theory	24BAM6E20	Core Elective – IV	3	-	-	25	75	100	3
IV	SEC4	Practical	24BAM6S10	Robotics Lab	-	4	-	30	45	75	2
				Total for Semester – VI	29			210	465	675	22
				Total	178			1305	2895	4200	140+ 4*

Students from **B.Sc (AI & ML)** to choose any one of the course from the following list of **Languages courses** offered:

List of Part – 1 Language Courses

S No	Semester	Course Type	Course Code	Course Name
1	I	Theory	23LAN1T10	Tamil – I
2	I	Theory	23LAN1H10	Hindi – I
3	I	Theory	23LAN1M10	Malayalam – I
4	I	Theory	23LAN1F10	French – I
5	I	Theory	23LAN1S10	Sanskrit-I
6	II	Theory	23LAN2T10	Tamil – II
7	II	Theory	23LAN2H10	Hindi – II
8	II	Theory	23LAN2M10	Malayalam – II
9	II	Theory	23LAN2F10	French – II
10	II	Theory	23LAN2S10	Sanskrit-II
11	III	Theory	24LAN3T10	Tamil – III
12	III	Theory	24LAN3H10	Hindi – III
13	III	Theory	24LAN3M10	Malayalam – III
14	III	Theory	24LAN3F10	French – III
15	III	Theory	24LAN3S10	Sanskrit-III
16	IV	Theory	24LAN4T10	Tamil – IV
17	IV	Theory	24LAN4H10	Hindi –IV
18	IV	Theory	24LAN4M10	Malayalam – IV
19	IV	Theory	24LAN4F10	French – IV
20	IV	Theory	24LAN4S10	Sanskrit-IV

List of Allied Courses (CBCS)

S.No.	Semester	Type of course	Course Code	Course Name
Allied – I				
1	I	Theory	23BMAGGB0	Introduction to Linear Algebra
Allied – II				
1	II	Theory	23BMAGGG0	Operations Research
Allied – III				
1	III	Theory	24BAM3G10	Operating System
Allied – IV				
1	IV	Theory	24BAM4G10	Cloud Computing

List of Value Based Courses

S.No.	Semester	Course Code	Course Name
1	III	23DHE3V10	Value Education & Human Rights
2	IV	23DHE4V10	Environmental Studies

List of Core Elective Courses (CBCS)

S.No.	Semester	Elective	Type of course	Course Code	Course Name
Electives of B.Sc. (AI&ML)					
1	V	I	Theory	24BAM5E10	Human Computer Interaction
2	V	II	Theory	24BAM5E20	Computer Vision
3	VI	III	Theory	24BAM6E10	AI for Business and intelligent marketing
4	VI	IV	Theory	24BAM6E20	UI/UX Design

List of Skill Based Courses

S.No.	Semester	Type of course	Course Code	Course Name
1	III	Practical	24BAM3S10	Database Management System Lab
2	IV	Practical	24BAM4S10	Computational Intelligence Lab
3	V	Practical	24BAM5S10	Internet of Things Lab
4	VI	Practical	24BAM6S10	Robotics Lab

List of Core Courses

S.No.	Semester	Core	Type of course	Course Code	Course Name
1	I	Core 1	Theory	23BAM1C10	Programming in C
2	I	Core 2	Practical	23BAM1C20	Programming in C Lab
3	I	Core 3	Theory	23BAM1C30	Data Structures and Algorithms
4	II	Core 4	Theory	23BAM2C10	Java Programming
5	II	Core 5	Practical	23BAM2C20	Java Programming Lab
6	II	Core 6	Theory	23BAM2C30	Artificial Intelligence & Knowledge Representation
7	III	Core7	Theory	24BAM3C10	Introduction to Database Management System
8	III	Core8	Theory	24BAM3C20	Python Programming
9	III	Core9	Practical	24BAM3C30	Python Programming Lab
10	III	Core10	Theory	24BAM4C10	R Programming
11	IV	Core11	Practical	24BAM4C20	R Programming with Data Visualization Lab
12	IV	Core12	Theory	24BAM4C30	Machine Learning Techniques
13	IV	Core13	Theory	24BAM5C10	Deep Learning
14	IV	Core14	Practical	24BAM5C20	Deep Learning Lab
15	V	Core15	Theory	24BAM5C30	Internet of Things
16	V	Core16	Project	24BAM5R10	Minor Project Work Lab
17	V	Core17	Theory	24BAM6C10	Natural Language Processing
18	V	Core18	Practical	24BAM6C20	Natural Language Processing Lab
19	VI	Core19	Theory	24BAM6C30	Principles of Robotics
20	VI	Core20	Project	24BAM6C40	Major Project Work Lab

LIST OF NON MAJOR ELECTIVE COURSES TO BE OFFERED FOR THE ACADEMIC YEAR 2023 – 2024

SNO	COURSE CODE	NAME OF COURSE	OFFERING DEPARTMENT
1	23BCS1N10	Office Automation	BSC CS
2	23BCS2N10	Multimedia Systems Lab	BSC CS
3	23BCA1N10	Digital Publishing Tools I	BCA
4	23BCA2N10	Digital Publishing Tools II	BCA
5	23BIT1N10	Office Automation for Documentation Lab	BSC IT
6	23BIT2N10	Office Automation for Presentation	BSC IT
7	23BFS1N10	Principles of Computer Security	BSC DCFS
8	23BFS2N10	Cyber Forensics	BSC DCFS
9	23BAM1N10	Basic Python Programming Lab	BSC AIML
10	23BAM2N10	Advance Python Programming Lab	BSC AIML
11	23BDA1N10	Data Visualization using Tableau I	BSC DSA
12	23BDA2N10	Data Visualization using Tableau II	BSC DSA
13	23BCM1N10	Practical Banking	BCOM

14	23BCM2N10	Entrepreneurship	BCOM
15	23BBC1N10	Accounting Software I	BCOM CA
16	23BBC2N10	Accounting Software II	BCOM CA
17	23BPA1N10	Personal Finance	BCOM PA
18	23BPA2N10	Basics of Stock Market	BCOM PA
19	23BAB1N10	Agricultural Marketing	BCOM ABA
20	23BAB2N10	Digital Marketing	BCOM ABA
21	23BAS1N10	Information Security	BCOM BA
22	23BAS2N10	Office Administration	BCOM BA
23	23BBI1N10	Digital Banking	BCOM B&I
24	23BBI2N10	Elements of Insurance	BCOM B&I
25	23TAM1N10	Basic Tamil I	TAMIL
26	23TAM2N10	Basic Tamil II	TAMIL
27	23TAM1N20	Advance Tamil I	TAMIL
28	23TAM2N20	Advance Tamil II	TAMIL
29	23BBA1N10	Basics of Event Management	BBA
30	23BBA2N10	Managerial Skill Development	BBA
31	23BMA1N10	Numerical Ability I	BSC MATHS
32	23BMA2N10	Numerical Ability II	BSC MATHS
33	23BEN1N10	Writing Skills for Media	BA ENG
34	23BEN2N10	Professional and Technical Writing	BA ENG
35	23BPY1N10	Psychological Wellbeing	BSC PSY
36	23BPY2N10	Psychological Self Management	BSC PSY
37	23BCH1N10	Food Chemistry	BSC CHE
38	23BCH2N10	Dairy Chemistry	BSC CHE