

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. Electronics and Communication Systems
(I to VI Semester)**

for 2024-25 admitted Students

DEPARTMENT OF ELECTRONICS AND COMMUNICATION SYSTEMS



SRI KRISHNA ARTS AND SCIENCE COLLEGE
COIMBATORE – 641008

DEPARTMENT OF ELECTRONICS AND COMMUNICATION SYSTEMS

(2024-2025)

I. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)	
Graduates from the B.Sc. Electronics and communication Systems Programme are expected to achieve the following PEOs	
PEO 1	Graduates will be practitioners and leaders in the field of Electronics and Communication Systems with effective interpersonal skills.
PEO 2	Graduates with an ability to solve scientific or engineering problems by using critical thinking and problem-solving skills in a multi-disciplinary setting.
PEO 3	Graduates will be professionals or entrepreneurs and exhibit technical, social, and ethical responsibility in service or product-based companies.
PEO 4	Graduates are equipped with skills in recent technologies and be receptive to attain professional competence through life-long learning.
PEO 5	Graduates will be successful in pursuing higher education and choosing the right career path.

II. PROGRAMME LEARNING OUTCOMES (PLOs)	
The Graduates of B.Sc. Electronics and Communication Systems programme will be able to:	
PLO1	Knowledge: Apply knowledge of Mathematics and Science in solving Electronics related problems. (Cognitive)
PLO2	Critical Thinking Skills: Demonstrate critical thinking skills in understanding of complex problems and to develop fully reasoned opinions on such contemporary issues. (Cognitive)
PLO3	Practical Skills: Design and conduct electronics experiments, as well as to analyze and interpret data using scientific/engineering methods. (Psychomotor)
PLO4	Teamwork Skills: Function as a member of a multidisciplinary team with sense of ethics, integrity and social responsibility. (Affective)
PLO5	Communication Skills: Communicate effectively in both verbal and written forms. (Affective)
PLO6	Digital Skills: Design and manage electronic systems or processes that conforms digital skills within ethical and economic constraints. (Affective)
PLO7	Numeracy Skills: Identify, formulate, solve and analyze the problems in various disciplines of Electronics. (Cognitive)
PLO8	Leadership Skills: Become competent by applying their technical and managerial skills. (Affective)

PLO9	Lifelong Learning Skills: Recognize the need for, and be able to engage in higher studies, research and lifelong learning. <i>(Affective)</i>
PLO10	Entrepreneurial Skills: Pursue the opportunity to create value and wealth for the betterment of the individual and society at large. <i>(Affective)</i>
PLO11	Ethics & Professional Skills: Apply ethical principles and commit to professional ethics and responsibilities, and norms of the scientific/ engineering practices. <i>(Affective)</i>

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

V. ADDITIONAL PROGRAMME OUTCOMES (APOs)

APO 1	Graduates will have ability with social intelligence with good Intelligent Quotient (IQ) and Emotional Quotient (EQ).
APO 2	Graduates will have a sense of creating and observing unique insights in what is seen and observed.
APO 3	Graduates will have design thinking capabilities.
APO 4	Graduates will have computational thinking capabilities (ability to translate vast data in the abstract concept) and understand database reasoning.
APO 5	Graduates will have virtual collaborative ability.
APO 6	Graduates will have ability to use social and open source media effectively for productive use.
APO 7	Graduates will have critical thinking and innovative skills.
APO 8	Graduates will have good digital foot prints.

VI. PROGRAMME SPECIFIC OUTCOMES (PSO's)

PSO 1	Graduates will be able to design and develop applications for Information Technology, Communication Systems, Signal Processing, Embedded Systems, Instrumentation and Control Systems, Networking, IoT, Automotive, Industrial Automation and Robotics.
PSO 2	Graduates will be able to use modern tools and programming techniques to solve problems in the field of Electronics and Communication, and IT.
PSO 3	Graduates will be able to pursue post-graduate or research-based programmes.

VII. Mapping of PEOs with PSOs

	PSO 1	PSO 2	PSO 3
PEO 1	3		3
PEO 2	3	3	
PEO 3	3		
PEO 4		2	2
PEO 5			3

VIII. Curriculum Structure for B.Sc. Electronics and Communication Systems

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	24
III& IV	2	DSC – Discipline Specific Courses	19	1500	60
	3	DSE – Discipline Specific Electives	12	1000	40
	4	GEC – Generic Elective Courses	4	400	12
	5	SEC – Skill Enhancement Courses	2	100	4
IV	6	ANCC I & II – Audit Non-Credit Courses	2	Completed	
V		ANCC III – Audit Non-Credit Courses	1		
-	7	Drive Through Courses (DTCs) – (SWAYAM-NPTEL, Coursera, any courses certified by statutory bodies, etc.)	Any number	-	Additional Credits
Total				4000	140

Group 1. Ability Enhancement Courses (AECs)(10 Courses)– Part (I–IV)

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	Marks	Credits
1	24AEC02/ 24AEC07/ 24AEC11/	AEC Part I: Language – I: Tamil-I: Tamil Nila - I/ Hindi – I/ French –I	I	Language	5	100	3
2	24AEC22	AEC Part II: English-I: English Language Dynamics	I	English	5	100	3
3	24AEC04/ 24AEC08/ 24AEC12/	AEC Part I: Language – II Tamil – II:Tamil Nila - II/ Hindi – II/ French – II	II	Language	5	100	3
4	24AEC24	AEC Part II: English-II: Campus to Corporate	II	English	5	100	3
5	24AEC34	AEC Part III: Academic Skills for Electronics	III	ECS	2	100	2
6	24AEC52	AEC Part III: Professional Ethics in	IV	ECS	2	100	1

		Electronic Science					
7	24AEC83	AEC Part IV: Communication Enhancement Course: Communication Excellence	III	English	2	100	1
8	24AEC44	AEC Part III: Comprehensive Project for Electronics	IV	ECS	-	100	4
9	24AEC81/ 24AEC82	AEC Part IV: Spoken Hindi/ Spoken Tamil	IV	Language	2	100	1
10	24AEC72	AEC Part III: Introduction to Rocket Science	V	ECS	5	100	3
Total						1000	24

Group 2. Discipline Specific Courses (DSCs)(18Courses) – Part III

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	Marks	Credits
1	24ECU01	Electronic Components and Devices	I	4	100	4
2	24ECU02	Electronic Components and Devices Lab	I	3	50	2
3	24ECU03	C Programming and Data Structures	I	4	100	3
4	24ECU04	C Programming and Data Structures Lab	I	2	50	2
5	24ECU05	Electronic Circuits and Analysis	II	4	100	4
6	24ECU06	Electronic Circuits and Analysis Lab	II	2	50	2
7	24ECU07	Python Programming	II	4	100	3
8	24ECU08	Python Programming Lab	II	2	50	2
9	24ECU09	Communication Electronics	III	5	100	5
10	24ECU10	Communication Electronics Lab	III	3	50	2
11	24ECU11	Computer Networks	III	4	100	4
12	24ECU12	Integrated Circuits and Instrumentation	IV	5	100	5
13	24ECU13	Linear Integrated Circuits Lab	IV	3	50	2
14	24ECU14	Modern Communication Systems	V	5	100	5
15	24ECU15	Modern Communication Systems Lab	V	3	50	2

16	24ECU16	Industrial and Automotive Electronics	VI	4	100	4
17	24ECU17	Industrial and Automotive Electronics Lab	VI	3	50	2
18	24ECU18	Machine Learning Techniques	VI	4	100	3
19	24ECU19	Major Project	VI	5	100	4
Total					1500	60

Project Work

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 shall be subject to internal evaluation followed by a Viva-Voce. The project should be demonstrated at the time of examination.

Internal Evaluation:

Reviews (3)	– 60 Marks
Report	– 20 Marks
Attendance	– 20 Marks
Total	– 100 Marks will be converted to 40 (Internal) Marks

End Semester Viva-Voce will be conducted for 60 Marks.

(Dissertation - 40 Marks & Viva-voce - 20 Marks)

Group 3. Discipline Specific Elective (DSEs) (12Courses) – Part III

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 one course from two courses each in the list of following DSEs.

S. No.	Course Code	Course Title	Ownership Department	Contact Hours	Marks	Credits
1	24ECU20	Digital Electronics and VHDL	ECS	5	100	5
	24ECU21	CAD for Electronics	ECS			
2	24ECU22	Digital Electronics and VHDL Lab	ECS	3	50	2
	24ECU23	CAD for Electronics Lab	ECS			
3	24ECU24	Embedded Systems	ECS	6	100	5
	24ECU25	Verilog Programming	ECS			
4	24ECU26	Embedded Systems Lab	ECS	3	50	2
	24ECU27	Verilog Programming Lab	ECS			
5	24ECU28	Industrial Exposure Training	ECS	4 Weeks	100	4
	OR					

	24ECU29	Robotics	ECS	4	100	4
	24ECU30	Digital Image Processing	ECS			
6	24ECU31	Introduction to Cloud Computing	ECS	4	100	4
	24ECU32	Introduction to Data Science	ECS			
7	24ECU33	Internet of Things	ECS	4	100	4
	24ECU34	R Programming	ECS			
8	24ECU35	Robotics and IoT Lab	ECS	3	50	2
	24ECU36	R Programming Lab	ECS			
9	24ECU37	Programmable Logic Controller	ECS	4	100	4
	24ECU38	Medical Electronics	ECS			
10	24ECU39	Programmable Logic Controller Lab	ECS	3	50	2
	24ECU40	Medical Electronics Lab	ECS			
11	24ECU41	Artificial Intelligence	ECS	4	100	4
	24ECU42	Soft Computing Techniques	ECS			
12	24ECU43	Artificial Intelligence Lab	ECS	3	100	2
	24ECU44	Soft Computing Techniques Lab	ECS			

Industrial Exposure Training (IET)

Students can opt for Industrial Exposure Training during fifth semester for a period of 4 weeks.

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

Component	Mode of Conduct	Project Coverage	Marks
3 Reviews	Presentation	Phase by Phase	60
Work Diary	Written	Phase by Phase	20
Report	Submission	Entire Process	20
Total			100*

*100 Marks will be converted to 40 (Internal) Marks

The end semester examination of the Industrial Exposure Training will be given based on the report and viva-voce for 60 marks, conducted by the Department.

Report : 40 Marks

Viva-voce : 20 Marks

Group 4. Generic Elective Courses (GECs)(4 Courses)– Part III

Generic Elective Courses are interdisciplinary in nature. They are additional courses based on expertise, specialization, requirements, scope, and need of the department.

Sl. No.	Course Code	Course Title	Semester	Ownership Department	Contact Hours	Marks	Credits
1	24GEU01	Mathematics – I	I	Mathematics	4	100	3
2	24GEU02	Mathematics – II	II	Mathematics	4	100	3
3	24GEU32A/ 24GEU33A	Object Oriented Programming using JAVA / C# .NET Programming	III	Computer Applications	4	50	2
	24GEU32B/ 24GEU33B	Object Oriented Programming using JAVA Lab / C# .NET Programming Lab	III	Computer Applications	2	50	1
4	24GEU34A/ 24GEU35B	Web Programming with JavaScript / Relational Database and SQL	IV	Computer Applications	4	50	2
	24GEU34B/ 24GEU35B	Web Programming with JavaScript Lab / Relational Database and SQL Lab	IV	Computer Applications	2	50	1
Total						400	12

Group 5. Skill Enhancement Courses (SECs)(2 Courses)

SEC I: Compulsory Course : Talent Enhancement Course : Career Guidance

SEC II: A Bucket of Skill based Courses are offered for the Under Graduate programmes by the departments aimed at imparting skill. A Student has to subscribe one course from list offered by the department.

S.No	Course Code	Course Title	Ownership Department
1.	24SEC01B	Arithmetical Ability	Mathematics
2.	24SEC20	3D Printing Processes and Applications	ECS
3.	24SEC21	Mobile Application Development	ECS

Group 6. Audit Non-Credit Courses (ANCC)– Part IV & V

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 Title	Ownership Department
ANCC 1 (Semester I)			
1	24ANC01	Environmental Studies	Bioscience
ANCC 2 - Values & Ethics (Semester II)			
2	24ANC02	Human Rights	Social Work

3	24ANC03	Women's Rights	Social Work
4	24ANC04	Yoga for Human Excellence	Psychology
5	24ANC05	Indian Culture and Heritage	English
6	24ANC06	Introduction to Cyber Security	CS
7	24ANC07	Consumer Protection	Commerce
8	24ANC08	Constitution of India	Commerce
9	24ANC09	Waste Management	Bioscience
10	24ANC10	Sustainable Development Goals	Management

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

Part V- ANCC		
ANCC 3 - Extension Activities		
S. No.	Course Code	Course Name
1	24ANC11	National Service Scheme
2	24ANC12	National Cadet Corps
3	24ANC13	Youth Red Cross
4	24ANC14	Red Ribbon Club
5	24ANC15	Rotaract Club
6	24ANC16	Sports
7	24ANC17	Association Activities
8	24ANC18	Club Activities

Group 7.

i) Drive-Through Courses (DTCs) 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 4/3/2 credits per course will be given on submission of certificate.

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

ii) Drive-Through Course (DTC – III)

Internship Training/Mini Project/ Spoken Tutorial/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 V 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	Ins. Hrs/ Week	ESE Dur. Hrs	CIA Marks	ES Marks	Total Marks	Credits	SD/ EM/ EN	L/ R/ N/ G
24AEC02/ 24AEC07/ 24AEC11/	AEC Part I: Language – I: Tamil – I- Tamil Nila – I/ Hindi – I/ French –I	T	5	3	25	75	100	3	SD	L/ N/ G/
24AEC22	AEC Part II: English-I : English Language Dynamics	T	5	3	25	75	100	3	SD	G
24ECU01	DSC 1 Electronic Components and Devices	T	4	3	25	75	100	4	SD	G
24ECU02	DSC 2- Electronic Components and Devices Lab	P	3	3	20	30	50	2	SD	G
24ECU03	DSC 3- C Programming and Data Structures	T	4	3	25	75	100	3	SD	G
24ECU04	DSC 4- C Programming and Data Structures Lab	P	2	3	20	30	50	2	SD	G
24GEU01	GEC 1 Mathematics I	T	5	3	25	75	100	3	SD	G
24ANC01	ANCC1 (NF2F) Environmental Studies	T	2	-	-	-	Completed		SD	G
Drive Through Course I: Additional Credit Courses							Additional Credits			
Total			30				600	20		
Semester II										
Course Code	Course Title	T/P/E	Ins. Hrs/ Week	ESE Dur. Hrs	CIA Marks	ES Marks	Total Marks	Credits	SD/ EM/ EN	L/ R/ N/ G
24AEC04/ 24AEC08/ 24AEC12	AEC Part I: Language – II Tamil Nila - II/ Hindi – II/ French – II	T	5	3	25	75	100	3	SD	L/ N/ G
24AEC24	AEC Part II: English-II: Campus to Corporate	T	5	3	25	75	100	3	SD	G
24ECU05	DSC 5 Electronic Circuits and Analysis	T	4	3	25	75	100	4	SD	G
24ECU06	DSC6 Electronic Circuits and Analysis Lab	P	3	3	20	30	50	2	SD	G
24ECU07	DSC 7 Python Programming	E	4	3	25	75	100	3	SD	G
24ECU08	DSC 8 Python Programming Lab	E	2	3	20	30	50	2	SD	G

24GEU02	GEC2 Mathematics II	T	5	3	25	75	100	3	SD	G	
24ANC02 24ANC03 24ANC04 24ANC05 24ANC06 24ANC07 24ANC08 24ANC09 24ANC10	ANCC2 (NF2F) Human Rights Women's Rights Yoga for Human Excellence Indian Culture and Heritage Introduction to Cyber Security Consumer Protection Constitution of India Waste Management Sustainable Development Goals	T	2	-	-	-	Completed		SD	G	
Drive Through Course II: Additional Credit Courses							Additional Credits				
Total			30				600	20			
Semester III											
Course Code	Course Title	T/P/E	Ins. Hrs/Week	ESE Dur. Hrs	CIA Marks	ES Marks	Total Marks	Credits	SD/EM/EN	L/ R/ N/ G	
24AEC81 24AEC82	AEC 5 Spoken Hindi/ Spoken Tamil	T	2	3	100	-	100	1	SD	N/ L	
24AEC83	AEC 6 Communication Enhancement Course: Communication Excellence	T	2	3	100	-	100	1	EM	G	
24ECU09	DSC 9 Communication Electronics	T	5	3	25	75	100	5	SD	G	
24ECU10	DSC 10 Communication Electronics Lab	P	3	3	20	30	50	2	SD	G	
24ECU11	DSC-11 Computer Networks	T	4	3	25	75	100	4	EM	G	
24ECU20/ 24ECU21	DSE1 Digital Electronics and VHDL / CAD for Electronics	T	5	3	25	75	100	5	EM	G	
24ECU22/ 24ECU23	DSE2 Digital Electronics and VHDL Lab/ CAD for Electronics Lab	P	3	3	20	30	50	2	EM	G	
24GEU32A/ 24GEU33A	GEC 3 Object Oriented Programming using JAVA / C# .NET Programming	E	4	3	10	40	50	2	EM	G	

24GEU32B/ 24GEU33B	Object Oriented Programming using JAVA Lab / C# .NET Programming Lab	E	2	3	10	40	50	1	EM	G
Total			30				700	23		

Semester IV										
Course Code	Course Title	T/P/E	Ins. Hrs/ Week	ESE Dur. Hrs	CIA Marks	ES Marks	Total Marks	Credits	SD/ EM/ EN	L/ R/ N/ G
24AEC52	AEC 7 Professional Ethics in Electronic Science	T	2	3	25	75	100	1	EN	G
24AEC44	AEC 8 Comprehensive Project for Electronics	P	-	3	100	-	100	4	EN	G
24ECU12	DSC 12 Integrated Circuits and Instrumentation	T	5	3	25	75	100	5	SD	G
24ECU13	DSC 13 Linear Integrated Circuits Lab	P	3	3	20	30	50	2	SD	G
24ECU24/ 24ECU25	DSE 3 Embedded Systems/ Verilog Programming	T	6	3	25	75	100	5	EN	G
24ECU26/ 24ECU27	DSE 4 Embedded Systems Lab/ Verilog Programming Lab	P	3	3	20	30	50	2	EN	G
24GEU34A/ 24GEU35A	Part III: GEC 4 Web Programming with JavaScript / Relational Database and SQL	E	4	3	10	40	50	2	EM	G
24GEU34B/ 24GEU35B	Web Programming with JavaScript Lab / Relational Database and SQL Lab	E	2	3	10	40	50	1	EM	G
24AEC34	AEC 10 Academic Skills for Electronic Science	P	2	3	100	-	100	2	EM	G
24SEC01B	SEC 1 : Arithmetical Ability	T	3	3	50	-	50	2	SD	N
Total			30				750	26		

Semester V										
Course Code	Course Title	T/P/E	Ins. Hrs/ Week	ESE Dur. Hrs	CIA Marks	ES Marks	Total Marks	Credits	SD/ EM/ EN	L/ R/ N/ G

24ECU14	DSC 14 Modern Communication Systems	T	5	3	25	75	100	5	SD	G
24ECU15	DSC 15 Modern Communication Systems Lab	P	3	3	20	30	50	2	SD	G
24ECU28	DSE 5 Industrial Exposure Training	-	4 Weeks	-	40	60	100	4	EM	G
OR										
24ECU29/ 24ECU30	DSE 5 Robotics / Digital Image Processing	T	4	3	25	75	100	4	EM	G
AND										
24ECU31/ 24ECU32	DSE 6 Introduction to Cloud Computing / Introduction to Data Science	T	4	3	25	75	100	4	EM	G
24ECU33/ 24ECU34	DSE 7 Internet of Things / R Programming	T	4	3	25	75	100	4	EN	G
24ECU35 / 24ECU36	DSE 8 Robotics and IoT Lab / R Programming Lab	P	3	3	20	30	50	2	EN	G
24AEC72	AEC 9 Introduction to Rocket Science	T	5	3	25	75	100	3	EM	G
24SEC20/ 24SEC21	SEC 2 3D Printing Processes and Applications/ Mobile Application Development	T	2	3	10	40	50	2	SD/EN	G
Drive Through Course III – Internship Training /Mini Project/Spoken Tutorial							Completed			
Total			30				650	26		
Semester VI										
Course Code	Course Title	T/P/E	Ins. Hrs/ Week	ESE Dur. Hrs	CIA Marks	ES Marks	Total Marks	Credits	SD/ EM/ EN	L/ R/ N/ G
24ECU16	DSC 16 Industrial and Automotive Electronics	T	4	3	25	75	100	4	EM	G
24ECU17	DSC 17 Industrial and Automotive Electronics Lab	P	3	3	20	30	50	2	EM	G
24 ECU18	DSC 18 Machine Learning Techniques	T	4	3	25	75	100	3	EM	G
24ECU19	DSC 19: Major Project	P	5	3	40	60	100	4	EN	G
24ECU37 / 24ECU38	DSE 9 Programmable Logic Controller/ Medical Electronics	T	4	3	25	75	100	4	EM	G

24ECU39/ 24ECU40	DSE 10 Programmable Logic Controller Lab / Medical Electronics Lab	P	3	3	20	30	50	2	EM	G	
24ECU41/ 24ECU42	DSE 11 Artificial Intelligence / Soft Computing Techniques	T	4	3	25	75	100	4	EM	G	
24ECU43/ 24ECU44	DSE 12 Artificial Intelligence Lab / Soft Computing Techniques Lab	T	3	3	40	60	100	2	EM	G	
24ANC11/ 24ANC12/ 24ANC13/ 24ANC14/ 24ANC15/ 24ANC16/ 24ANC17/ 24ANC18/	ANCC 3 Extension Activities National Service Scheme / National Cadet Corps / Youth Red Cross / Red Ribbon Club / Rotaract Club / Sports / Association Activities / Club Activities	-	-	-	-	-	Grade	-	SD	G	
Total			30				700	25			
Total							4000	140			
Drive-Through Courses (DTCs): Courses offered in Coursera OR NPTEL 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 focus on the following needs	
SD	Skill Development
EM	Employability
EN	Entrepreneurship
L	Local
R	Regional
N	National
G	Global

Semester-wise Distribution of Marks and Credits

Semester	Total Marks	Total Credits
I	600	20
II	600	20
III	700	23
IV	750	26
V	650	26
VI	700	25
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	SD/ EM/ EN	L/ R/ N/ G
I	24GEU01	Mathematics - I	B.Sc ECS	T	4	25	75	100	3	SD	G
II	24GEU02	Mathematics - II	B.Sc ECS	T	4	25	75	100	3	SD	G

List of Courses Offered by Computer Applications Department

Semester	Course Code	Course Name	Programme	T/P/E	Ins. Hrs	CIA	ES	Total Marks	Credit	SD/ EM/ EN	L/ R/ N/ G
III	24GEU32A	Object Oriented Programming using JAVA	B.Sc ECS	E	4	10	40	50	2	EM	G
	24GEU33A	C# .NET Programming Lab	B.Sc ECS	E	4	10	40	50	2	EM	G
III	24GEU32B	Object Oriented Programming using JAVA Lab	B.Sc ECS	E	2	20	30	50	1	EM	G
	24GEU33B	C#.NET Programming Lab	B.Sc ECS	E	2	20	30	50	1	EM	G
IV	24GEU34A	Web Programming with JavaScript	B.Sc ECS	E	4	10	40	50	2	EM	G
	24GEU35A	Relational Databases and SQL	B.Sc ECS	E	4	10	40	50	2	EM	G
IV	24GEU34B	Web Programming with JavaScript Lab	B.Sc ECS	E	2	20	30	50	1	EM	G
	24GEU35B	Relational Databases and SQL Lab	B.Sc ECS	E	2	20	30	50	1	EM	G

OFFERED TO

List of Courses Offered to B.Sc. (IT), B.Sc. (CT), B.Sc. (CS), B.Sc. (CSA), B.Sc. (SS), B.Sc. (CS with CG), B.Sc. Data Science, B.Sc. (AI with ML) & BCA

Semester	Course Code	Course Name	T/P/E	Ins. hrs	CIA	ES	Total Marks	Credit	SD/ EM/ EN	L/ R/ N/ G
IV	24GEU47	Embedded Systems	T	5	25	75	100	3	EM	G
	24GEU48	Robotics and Applications	T	5	25	75	100	3	EM	G
	24GEU49	PC Hardware	T	5	25	75	100	3	EM	G

List of Courses Offered to B.Sc. (CS with CG)

Semester	Course Code	Course Name	T/P/E	Ins. hrs	CIA	ES	Total Marks	Credit	SD/ EM/ EN	L/ R/ N/ G
III	24CGU20	DSE Physics for Computer Science	T	5	25	75	100	4	SD	G