



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



BCA / BCA (HONS) IN IOT AND BCA (HONS) IN AI AND
DEEP LEARNING

CURRICULUM STRUCTURE & SYLLABI
(2025-2028 BATCH ONWARDS)



**SCHOOL OF ENGINEERING AND TECHNOLOGY
MODY UNIVERSITY OF SCIENCE AND TECHNOLOGY
LAKSHMANGARH**

BACHELOR OF COMPUTER APPLICATIONS (BCA/ BCA – Honors)
Academic Curriculum (2025 – 28 Batch)

First Year
Curriculum Component

Component	Credit (BCA)	Credit (BCA- Hons) (IV Year)
1. University core (3 courses)	6	-
2. University Elective (2courses)	6	-
3. Basic Science (2 courses)	6	2 (1 Course)
4. Program Core (26 courses)	68	10 (4 Course)
5. Program Elective (4 courses)	12	10 (4 Specialization Electives)
6. Project/Seminar (2 courses)	22	10 (2 Course)
7. Proficiency (Non Credit/Non Graded)	-	3 (1 MOOC Course)
Total	120	35

Autumn Semester	Course Type	Course Title	Contact Hrs Per Week			Credits	ETE Duration Hours	Weightage %			
			L	T	P			CW	MTE	PBL	ETE
	UC 23.101	Human Values & Professional Ethics	2	0	0	2	3	10	40		50
	CA 23.101	Computer Fundamentals	3	-	-	3	3	10	40		50
	CA 23.103	C Programming	3	-	-	3	3	10	40		50
	CA 23.107	Foundation Course in Mathematics	3	1	-	4	3	10	40		50
	CY23.102	Environmental Studies	2	0	0	2	3	10	40		50
	FL	Foreign Language*(Non Grade)	3	-	-	3	3	25	25		50
	CA 23.133	Office Automation Laboratory	-	-	4	2	2	20	20	20	40
	CA 23.135	C Programming Laboratory	-	-	4	2	2	20	20	20	40
	SF 101	Personal Grooming and Fine Dining	0	0	2	1	2	50			50
		Sub Total	16	1	10	18					

Spring Semester	Course Type	Course Title	Contact Hrs per Week			Credits	ETE Duration Hour	Weightage %			
			L	T	P			CW*	MTE	PBL	ETE
	UC 23.102	Pragmatic English Communication	2	0	0	2	3	10	40		50
	UE	University Elective-I	3	-	-	3	3	10	40		50
	CA 23.102	Operating System	3	-	-	3	3	10	40		50
	CA 23.104	Data Structures	3	-	-	3	3	10	40		50
	CA 23.106	Systems Analysis and Design	3	-	-	3	3	10	40		50
	CA 23.108	Python Programming	3	1	-	4	3	10	40		50
	FL	Foreign Language*(Non Grade)	3	-	-	3	3	25	25		50
	CA 23.134	Data Structures Laboratory	-	-	4	2	2	20	20	20	40
	CA 23.136	Python Programming Laboratory	-	-	4	2	2	20	20	20	40
	SF 102	Social Grooming, Home & Decor and Business Communication	0	0	2	1	2	50			50
		Sub Total	20	1	10	22					

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Second Year
Curriculum Component

Autumn Semester	Course Type	Course Title	Contact Hrs			Credits	ETE Durati on Hours	Weightage %			
			L	T	P			CW	MTE	PBL	ETE
	CA 23.201	Computer Organization	3	1	-	4	3	10	40		50
	CA 23.203	Database Management System	3	-	-	3	3	10	40		50
	PE	Program Elective-I	3	-	-	3	3	10	40		50
	CA 23.207	C++ Programming	3	-	-	3	3	10	40		50
	CA 23.204	Computer Networks	3	1	-	4	3	10	40		50
	FL	Foreign Language*(Non Grade)	3	-	-	3	3	25			50
	CA 23.233	Database Management System Laboratory	-	-	4	2	4	20	20	20	40
	CA 23.235	C++ Programming Laboratory	-	-	4	2	4	20	20	20	40
	SF 201	Personal Grooming Fine Dining and Home Safety (Non Grade)	0	0	2	1	2	50			50
		Sub Total	17	2	8	21					

Spring Semester	Course Type	Course Title	Contact Hrs per Week			Credits	ETE Durati on Hours	Weightage %			
			L	T	P			CW	MTE	PBL	ETE
	UC 25.201	Management and Entrepreneurship	2	0	0	2	2	10	40		50
	UE	University Elective-2	3	-	-	3	3	10	40		50
	CA 23.209	Discrete Mathematics	3	1	-	4	3	10	40		50
	CA 23.206	Computer Graphics	3	1	-	4	3	10	40		50
	CA 23.210	Java Programming	3	-	-	3	3	10	40		50
	PE	Program Elective-2	3	-	-	3	3	10	40		50
	FL	Foreign Language*(Non Grade)	3	-	-	3	3	25	25		50
	CA 23.234	Internet Laboratory	-	-	4	2	4	20	20	20	40
	CA 23.236	Java Programming Laboratory	-	-	4	2	4	20	20	20	40
	SF 202	Social Grooming and Professional Skills(Non Grade)	0	0	2	1	2	50			50
		Sub Total	17	2	8	23					

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Third Year
Curriculum Component

Autumn Semester	Course Type	Course Title	Contact Hrs per			Credits	ETE Duration Hours	Weightage %		
			L	T	P			CW	MTE	ETE
	CA 23.301	Web Technology	3	-	-	3	3	10	40	50
	CA 23.303	Software Engineering	3	0	0	3	3	10	40	50
	PE	Program Elective – 3	3	0	0	3	3	10	40	50
	CA 23.333	Web Application Development Laboratory	-	-	4	2	2	20	40	40
		Program Elective – 4				3		20	40	40
	FL	Foreign Language*(Non Grade)	3	-	-	3	3	25	25	
	CA 25.339	Minor Project	-	-	-	7	-	20	40	40
	SF 301	Civility and Ethics Business and Professional Grooming, Corporate Dinning	0	0	2	1	2	50	0	50
		Sub Total	12		4	21				

Spring Semester	Course Type	Course Title	Contact Hrs per Week			Credits	ETE Duration Hours	Weightage %		
			L	T	P			CW	MTE	ETE
	CA 23.312	Major Project*	-	-	-	15	-			100
		Sub Total				15				

Total Credits = 40+44+36=120

MTE : Mid Term Examination

ETE : End Term Examination

*Major Project: Spring Semester of third year will be exclusively for project training in an organization in which student shall be required to work on a project assigned by such organizations in consultation with the concerned Internal Supervisor allotted to her from the faculty members of the department. However, In exceptional conditions HOD may allow any student to undergo the project training in the campus under the supervision of faculty member assigned to her. At the end of the semester the student shall be required to submit a Project Report based on the project given to her. A committee of the Internal Supervisor & External Examiner will evaluate the report & conduct viva- voce.

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Forth Year
Curriculum Component

Autumn Semester	Course Type	Course Title	Contact Hrs per Week			Credits	ETE Duration Hours	Weightage %			
			L	T	P			CW	MTE	PBL	ETE
		Specialization Elective-I	3	-	-	3	3	10	40		50
	CA 23.401	Network Security and Cryptography	3	-	-	3	3	10	40		50
		MOOC**	3	-	-	3	3	10	40		50
	CA 23.402	Research Methodology	2	-	-	2	3	10	40		50
	CA 23.403	Seminar	-	-	4	2		100			
		Specialization Elective Laboratory-I	-	-	4	2	4	20	20	20	40
	CA 23.405	Network Security and Cryptography Lab	-	-	4	2	4	20	20	20	40
		Sub Total	11	0	12	17					

Spring Semester	Course Type	Course Title	Contact Hrs per Week			Credits	ETE Duration Hours	Weightage %			
			L	T	P			CW	MTE	PBL	ETE
		Specialization Elective-II	3	-	-	3	3	10	40		50
	CA 23.411	Machine Learning	3	-	-	3	3	10	40		50
		Specialization Elective Laboratory-II	-	-	4	2	4	20	20	20	40
	CA 23. 413	Machine Learning lab	-	-	4	2	4	20	20	20	40
	CA 23.412	Project/Dissertation				8					
		Sub Total	11	0	12	18					

Total Credits: 120+35= 155

*Choose any one which shall remain in all six semesters					
Semester- I			Semester-II		
FL 20.101	French Language & Grammar-I		FL 20.102	French Language & Grammar-II	
GL 20.101	German Language & Grammar-I		GL 20.102	German Language & Grammar-II	
JL 20.101	Japanese Language & Grammar-I		JL 20.102	Japanese Language & Grammar-II	
SL 20.101	Spanish Language & Grammar-I		SL 20.102	Spanish Language & Grammar-II	
Semester- III			Semester- IV		
FL 20.201	French Language & Grammar-III		FL 20.202	French Language & Grammar-IV	
GL 20.201	German Language & Grammar-III		GL 20.202	German Language & Grammar-IV	
JL 20.201	Japanese Language & Grammar-III		JL 20.202	Japanese Language & Grammar-IV	
SL 20.201	Spanish Language & Grammar-III		SL 20.202	Spanish Language & Grammar-IV	

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Program Elective-1		
S. No.	Course Code	
1.	CA 23.231	Management Information System
2.	CA 23.232	Enterprise Resource Planning
3.	CA 23.237	Software Project Management
Program Elective-2		
S. No.	Course Code	Course Title
1.	CA 23.263	System Software
2.	CA 23.265	Internet Technologies
3.	CA 23.267	Network Security
4.	CA 23.208	Electronic Commerce
5.	ET 23.471	Cloud Computing (Infosys)
Program Elective 3		
1.	CA 23.373	Software and Case Study
2.	CA 23.375	Bioinformatics
3.	CA 23.377	Geographical Information System
4.	CA 23.369	E-Business
5.	ET 23.465	Agile Software Development (Infosys)
Program Elective 4		
1.	CA 23.362	Knowledge Management
2.	CA 23.364	Artificial Intelligence
3.	CA 23.366	Information Security
4.	CA 23.368	Cyber Laws
5.	ET 23.362	Mobile Apps Development (Infosys)

Semester- V

FL 20.301	French Language & Grammar-V
GL 20.301	German Language & Grammar-V
JL 20.301	Japanese Language & Grammar-V
SL 20.301	Spanish Language & Grammar-V

**MOOC courses will be approved by Department.

Choose any one which shall remain in 7th and 8th Semesters

Specialization Elective-I: Internet of Things (IOT)		Specialization Elective Laboratory-I	
CA 23.481	Introduction to IOT	CA 23.484	Introduction to IoT Laboratory
CA 23.482	Wireless Sensor Networks & IoT Standards	CA 23.485	Sensors and Device laboratory
CA 23.483	IoT for Industries	CA 23.486	IoT for Industries Laboratory
Specialization Elective-II : AI and Deep Learning		Specialization Elective Laboratory-II	
CA 23.487	Artificial Neural Networks	CA 23.494	Artificial Neural Networks Lab
CA 23.488	Deep Learning	CA 23.495	Deep Learning Laboratory
CA 23.489	Natural language processing	CA 23.496	Natural Language Processing Lab

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Credit Distribution across all Components										
Semester		UC	UE	BS	ES	PC	PE/SE	MOOC	Proj/Seminar	Total
First		2	-	6	-	10	-	-		18
Second			3	-	-	17				22
Third		2		-		18	3			23
Fourth		2	3			15	3			23
Fifth						8	6	-	2	16
Sixth									15	15
BCA	Total	6	6	6		68	12	-	17	120
BCA (Hons)	Seventh	-	-	2	-	5	5	3	2	17
	Eighth	-	-	-	-	5	5	-	8	18
	Total	-	-	2	-	10	10	3	10	35

Exit Options:

- I. After II Semester - Exit option with Certificate in Computer Applications (with a minimum of 40 credits)
- II. After IV Semester - Exit option with Diploma in Computer Applications (with a minimum of 86 credits)
- III. After VI Semester - Exit Option with Bachelor of Computer Applications Degree, BCA Degree (with a minimum of 120 credits)
- iv. After VIII Semester - Award of Bachelor of Computer Applications- Honors Degree, BCA (Hons.) Degree (155 credits)