



School of Basic and Applied Sciences
Department of Mathematical Sciences

Programme Name: B.Sc (Mathematics and Computing)
Programme Code: MTH3404

Undergraduate Course Structure
Batch: 2026-2030

SCHOOL OF BASIC AND APPLIED SCIENCES
UNDERGRADUATE COURSE STRUCTURE
B.Sc (Mathematics and Computing)

SEMESTER I								
SL. No	Type of Course	Code	Title of the Course	Credit Distribution				Remarks
				L	T	P	C	
1	CC	MTH102	Calculus	3	0	1	4	CC-1
2	CC	MTH107	Algebra	3	1	0	4	CC-2
3	Minor	IKS101	Introduction to IKS	4	0	0	4	
4	MDC						3	
5	AEC	AEC101	Communicative English I	2	0	0	2	
6	AEC		Foreign Language I	2	0	0	2	Spanish/ German/ French
7	VAC	VAC101	Environmental Education-I	2	0	0	2	
8	SEC	GEN102	Principles and Applications of AI	2	0	0	2	
Total Semester Credit							23	
SEMESTER II								
SL. No	Type of Course	Code	Title of the Course	Contact Hours Per Week				Remarks
				L	T	P	C	
9	CC	MTH103	Real Analysis	3	1	0	4	CC-3
10	CC	MTH104	Ordinary Differential Equation	3	0	1	4	CC-4
11	Minor	GEN104	Basic Cyber Security and Internet of Things	4	0	0	4	
12	MDC						3	
13	AEC	AEC102	Communicative English II	2	0	0	2	
14	AEC		Foreign Language II				2	Spanish/ German/ French
15	VAC	VAC105	Community Engagement and Social Responsibility	1	0	1	2	
16	SEC						2	
17	SEC	CLL103	Soft Skills and Aptitude I	1	0	0	1	Soft Skills and Aptitude
Total Semester Credit							24	

*MDC, AEC, VAC, and SEC are Pan-University level courses offered by different departments of the university. Students have to select one of the courses of each type from the list provided at the beginning of the semester.

**Minor subjects are also offered as Pan-University subjects. A student will obtain a degree with a 'Minor' in a subject if the student studied and obtained at least 16 credits (4 courses) in that subject.

*** L: Lecture Hour, T: Tutorial Hour, P: Practical Hour, C: Credit of the course

SEMESTER III								
SL. No	Type of Course	Code	Title of the Course	Contact Hours Per Week				Remarks
				L	T	P	C	
18	CC	MTH207	Discrete Mathematics	3	1	0	4	CC-5
19	CC	MTH205	Multivariate Calculus	3	0	1	4	CC-6
20	Minor						4	
21	MDC						3	
22	VAC	VAC102	Human Values and Ethics	2	0	0	2	
23	SEC						2	
24	SEC	CLL203	Soft Skills and Aptitude II	1	0	0	1	Soft Skills and Aptitude
Total Semester Credit							20	
SEMESTER IV								
SL. No	Type of Course	Code	Title of the Course	Contact Hours Per Week				Remarks
				L	T	P	C	
25	CC	MTH201	Linear Algebra	3	1	0	4	CC-7
26	CC	MTH208	Linear Programming and Game Theory	3	0	1	4	CC-8
27	CC	CSE281	Data Structure	3	0	1	4	CC-9
28	Minor						4	
29	VAC						2	
30	SEC						2	
31	SEC	CLL204	Soft Skills and Aptitude III	1	0	0	1	Soft Skills and Aptitude
Total Semester Credit							21	
SEMESTER V								
SL. No	Type of Course	Code	Title of the Course	Contact Hours Per Week				Remarks
				L	T	P	C	
32	CC	MTH301	Numerical Methods	3	0	1	4	CC-10
33	CC	MTH304	Complex Analysis	3	1	0	4	CC-11
34	CC	CSE382	Design and Analysis of Algorithm	3	0	1	4	CC-12
35	Minor						4	
36	SEC						2	
37	SEC	CLL303	Soft Skills and Aptitude IV	1	0	0	1	Soft Skills and Aptitude
38	INT	MTH350	Internship (Summer Project)				2	
Total Semester Credit							21	

SEMESTER VI								
SL. No	Type of Course	Code	Title of the Course	Contact Hours Per Week				Remarks
				L	T	P	C	
39	CC	CSE381	Operating Systems	3	0	1	4	CC-13
40	CC	MTH305	Integral Transform and Partial Differential Equations	3	1	0	4	CC-14
41	CC	MTH309/ MTH310/ SDS308	Computational Number Theory/Soft Computing/Machine Learning and Applications	3	0	1	4	CC-15
42	CC	MTH311	Tools and Techniques for Scientific Report Writing	0	0	2	2	CC-16
43	Minor						4	
44	SEC						2	
45	SEC	CLL304	Soft Skills and Aptitude V	1	0	0	1	Soft Skills and Aptitude
46	Project	MTH351	Project				4	
Total Semester Credit							25	
Total Credit After 3 rd Year							134	
SEMESTER VII								
SL. No	Type of Course	Code	Title of the Course	Contact Hours Per Week				Remarks
				L	T	P	C	
47	CC	MTH409	Optimization Techniques	3	0	1	4	CC-17
48	CC	MTH410	Mathematical Modelling and Simulation	3	0	1	4	CC-18
49	CC	CSE483	Cloud Computing	3	0	1	4	CC-19
50	CC (For With research)	MTH450	Research Methodology	3	1	0	4	CC-21 (With Research)
51	CC (For Without research)	SDS402/ MTH411/ MTH405	Advanced Machine Learning and Applications/Cryptography and Network Security/Operations Research	3	0	1	4	CC-22 (without Research)
52	Minor						4	
53	SEC	CLL405	Soft Skills and Aptitude VI				1	Soft Skills and Aptitude
Total Semester Credit							21	

SEMESTER VIII								
SL. No	Type of Course	Code	Title of the Course	Contact Hours Per Week				Remarks
				L	T	P	C	
54	CC	MTH408	Computational Matrix Theory	3	0	2	4	CC-20
55	CC (For Without research)	MTH412/ CSE484/ MTH413/ CSE485	Calculus of Variation and Integral Equations/Network Theory/ Numerical Methods for ODE and PDE/Computer Graphics				4	CC-23 (without Research)
56	CC (For Without Research)	MTH414/ MTH415/ SDS456	Advanced Graph Theory/ Dynamics of a Particle /Artificial Intelligence				4	CC-24 (without Research)
57	Minor						4	
58	Minor (For without research)						4	
59	Dissertation	MTH499	Project/Dissertation				12	
Total Semester Credit							20	
Total Credit After 4th Year							175	

*NOTE: With research is only allowed for Students *who secure 75% marks and above in the first six semesters*

Credit Distribution

Semester	Credit for the Following Types of Courses						
	Core Course (CC)	Minor Course	Multi-Disciplinary Course (MDC)	Ability Enhancement Course (AEC)	Value Added Course (VAC)	Skill Enhancement Course (SEC)	Project/Research Project/ Dissertation/ Internship
I	8	4	3	4	2	2	-
II	8	4	3	4	2	3	-
III	8	4	3	-	2	3	-
IV	12	4	-	-	2	3	-
V	12	4	-	-	-	3	2
VI	14	4	-	-	-	3	4
VII	16	4	-	-	-	1	-
VIII	4 (for with Research) 12 (for without Research)	4 (for with Research) & 8 (for without Research)	-	-	-	-	12 (for with Research)
Total Credit	82 (for with Research) 90 (for without Research)	32 (for with Research) 36 (for without Research)	9	8	8	18	18 (for with Research) 6 (for without Research)

****Total Credit attributed to Major is 94 (for with Research) and 90 (for without Research).**