

Proposed Curriculum Framework

Bachelor of Science (B.Sc.) in Mathematics

Department of Mathematics

University of Engineering & Management (UEM), Jaipur

(NEP 2020 Aligned | Research, Computing & Industry Integrated | Effective from Academic Session 2026–27)

Programme Duration: 4 Years (8 Semesters)

Total Credits: 160 Credits (20 Credits/Semester)

Eligibility: 10+2 with Mathematics (Physics/Computer Science preferred)

Multiple Exit Options (NEP 2020)

* After 1 Year: Certificate in Mathematical Sciences

* After 2 Years: Diploma in Applied Mathematics

* After 3 Years: B.Sc. Mathematics

* After 4 Years: B.Sc. Mathematics (Honours/Research)

The curriculum is designed by benchmarking NEP-aligned undergraduate mathematics programmes while incorporating modern areas such as computational mathematics, data science, artificial intelligence, financial mathematics, cryptography, optimization, and mathematical modelling to enhance employability and research readiness.

1. The NEP 2020 based Four-Year UG Programme is an 8-semester (4-year) Programme of 160 credits with multiple exit and entry options at the successful completion of courses assigned at the end of each year.
 - Students who opt to exit after completion of the first year and have secured 40 credits will be awarded a UG certificate if, in addition, they complete one vocational course of 4 credits during the summer vacation of the first year. These students are allowed to re-enter the degree programme within three years and complete the degree programme within the stipulated maximum period of seven years.
 - Students who opt to exit after completion of the second year and have secured 80

credits will be awarded the UG diploma if, in addition, they complete one vocational course of 4 credits during the summer vacation of the second year. These students are allowed to re-enter within a period of three years and complete the degree programme within the maximum period of seven years.

- Students who wish to undergo a 3-year UG programme will be awarded UG degree in the Major discipline after successful completion of three years securing 120 credits.
- Students who wish to undergo a 4-year UG programme will be awarded UG Honours degree in the major discipline after successful completion of four years degree programme with 160 credits.
- Students who meet minimum requirement of CGPA of 7.5, shall be eligible for a UG Honours with Research degree in respective discipline/field of study after successful completion of 160 Credit, including 12/16 Credits from a research project.

Outline of Courses:

1. Major and Minor Courses: Major and minor courses are 4 credits courses. An additional one to two credits may be for tutorials or practices.
 2. Other Courses: The Other courses are 3 Credits courses which included multi-disciplinary, Ability enhancement (language) and skill enhancement courses.
 3. Value Added Courses (Common): Courses under value-added, summer internship/ apprenticeship/ community outreach activities of 2 credits.
 4. Final year research project/ dissertation: Final year research project or dissertation will of 12 credits.
2. Students qualifying and taking one-year Master's degree programme and have secured 200 credits will be awarded the Master's degree in Mathematics.

Structure of the 4-Year UG Programme

Minimum Credit requirements to Award Certificate/ Diploma/ Degree under each category

S. No.	Broad category of Course	Minimum Credit requirement				
		UG Certificate (1-year)	UG Diploma (2-year)	UG Degree (3-year)	UG Honours Degree (4-year)	UG Honours with Research Degree (4-year)
1	MAJOR	8	30	60	80	80
2	MINOR	8	16	24	44	32
3	INTER DISCIPLINARY COURSES (IDC)	6	9	9	9	9
4	ABILITY ENHANCEMENT COURSES (AEC)	4	8	8	8	8
5	SKILL ENHANCEMENT COURSES (SEC)	6	9	9	9	9
	VALUE-ADDED COURSES (VAC)	8	8	8	8	8
6	SUMMER INTERNSHIP	4*	4*	2	2	2
7	RESEARCH PROJECT/ DISSERTATION	-	-		-	12
	Total	40+4*	80+4*	120	160	160

CORE: MAJOR AND MINOR

IDC: INTER DISCIPLINARY COURSES

AEC: ABILITY ENHANCEMENT COURSES

SEC: SKILL ENHANCEMENT COURSES

VAC: VALUE-ADDED COURSES

INT: INTERNSHIP

DISS: DISSERTATION

Course Structure:

Semester-I: UG

S. No.	Course Code	Title of Courses	Type of Course	Credits
1	BMAT101	Discrete Mathematics	Major	4
2	BMAT102	Programming in C	Minor	4
3	BMAT103	Mathematics-I for Life Science	IDC	3
4	BMAT104	Scientific writing by LaTeX	SEC	3
5	BMAT105	Quantitative aptitude	AEC	2
6	BMAT106	Indian Knowledge System (IKS)	VAC	4
			Total	20

Semester-II: UG

S. No.	Course Code	Title of Courses	Type of Course	Credits
1	BMAT201	Differential Calculus	Major	4
2	BMAT202	Introduction to Space Dynamics	Minor	4
3	BMAT203	Mathematics-II for Life Science	IDC	3
4	BMAT204	Introduction to SciLab	SEC	3
5	BMAT205	Mathematical and Logical Reasoning	AEC	2
6	BMAT206	Universal Human Values (UHV)	VAC	4
			Total	20