

COURSE STRUCTURE AS PER NEP 2020

FYUP in Mathematics from 2024 onwards

Semester-I

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Major	MTL MD101	Differential Calculus	4-0-0	4
Minor	XXX MI XXX	Choose one from the pool of Courses from allied schools	4-0-0	4
Multidisciplinary	XXX MU XXX		3-0-0	3
Ability Enhancement Course	XXX AE XXX		3-0-0	3
Skill Enhancement course	XXX SE XXX		2-0-0/ 1-0-2	2
Value added course-1	XXX VA XXX		2-0-0	2
Value added course-2	XXX VA XXX		2-0-0	2
		Total Credits	20-0-0/ 19-0-1	20

Minor

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Minor	MTL MI101	Elements of Discrete Mathematics	4-0-0	4

Multidisciplinary Courses from Mathematics for other Departments/Disciplines:

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Multidisciplinary	MTL MU101	Fundamentals of Calculus and applications	3-0-0	3

Semester-II

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Major	MTL MD102	Integral Calculus	4-0-0	4
Minor	XXX MI XXX	Choose one from the pool of Courses from allied schools	4-0-0	4
Multidisciplinary	XXX MU XXX		3-0-0	3
Ability Enhancement Course	XXX AE XXX		3-0-0/ 2-1-0	3
Skill Enhancement course	XXX SE XXX		2-0-0/ 1-0-2	2
Value added course-3	XXX VA XXX		2-0-0	2
Value added course-4	XXX VA XXX		2-0-0	2
		Total Credits	20-0-0/ 18-1-1	20

Minor

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Minor	MTL MI102	Analytical Geometry of 3-D and Trigonometry	4-0-0	4

Multidisciplinary Courses from Mathematics for other Departments/Disciplines:

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Multidisciplinary	MTL MU102	Probability & Statistics with Applications	3-0-0	3

Semester-III

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Major	MTL MD201	Fundamentals of Algebra	4-0-0	4
Major	MTL MD203	Real Analysis-I	4-0-0	4
Minor/ DSE-1	MTL MI201	Computer Programming	3-0-0	3
	MTM MI201	Computer Programming Lab	0-0-2	1
Multidisciplinary	XXX MU XXX		3-0-0	3
Ability Enhancement Course	XXX AE XXX		3-0-0	3
Skill Enhancement course	XXX SE XXX		2-0-0/ 1-0-2	2
		Total Credits	20-0-0/ 19-0-1	20

	Minor/ DSE-1		
Course Code	Course Name	L-T-P **	Credits
MTL MI201	Computer Programming	3-0-0	3
MTM MI201	Computer Programming Lab	0-0-2	1
MTL MI203	Theory of Reliability	4-0-0	4

Multidisciplinary Courses from Mathematics for other Departments/Disciplines:

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Multidisciplinary	MTL MU201	Discrete Structures with Applications	3-0-0	3

Semester-IV

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Major	MTL MD202	Real Analysis-II	4-0-0	4
Major	MTL MD204	Probability and Statistics	3-0-0	3
	MTM MD204	Probability and Statistics Lab	0-0-2	1
Major	MTL MD206	Vector Calculus	4-0-0	4
Major	MTL MD208	Fundamentals of Complex Variables	4-0-0	4
Minor/ DSE-2				
		Total Credits	19-0-2	20

Minor/ DSE-2			
Course Code	Course Name	L-T-P **	Credits
MTL MI202	Set Theory	4-0-0	4
MTL MI204	Information Theory	4-0-0	4
MTL MI206	Biomathematics	4-0-0	4

Semester-V

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Major	MTL MD301	Multivariable Calculus	4-0-0	4
Major	MTL MD303	Linear Algebra	4-0-0	4
Major	MTL MD305	Ordinary Differential Equations	4-0-0	4
Minor/ DSE-3				
IAPC	MTIPR301	Summer Internship		2
Skill Enhancement course	XXX SE XXX		2-0-0/ 1-0-2	2
		Total Credits		20

Minor/ DSE-3			
Course Code	Course Name	L-T-P **	Credits
MTL MI301	Integral Transforms	4-0-0	4
MTL MI303	Decision Theory	4-0-0	4
MTL MI305	Econometrics	4-0-0	4
MTL MI307	Fuzzy Logic and Applications	4-0-0	4

Semester-VI

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Major	MTL MD302	Metric Spaces	4-0-0	4
Major	MTL MD304	Number Theory & Cryptography	4-0-0	4
Major	MTL MD306	Partial Differential Equations	4-0-0	4
Major	MTL MD308	Graph Theory	4-0-0	4
Minor/ DSE-4				
		Total Credits	20-0-0	20

	Minor/ DSE-4		
Course Code	Course Name	L-T-P **	Credits
MTL MI302	Linear Programming and Game Theory	4-0-0	4
MTL MI304	Financial Mathematics	4-0-0	4

Semester-VII

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Major	MTL MD401	Abstract Algebra	4-0-0	4
Major	MTL MD403	Advanced Real Analysis	4-0-0	4
Major	MTL MD405	Topology	4-0-0	4
Major	MTL MD407	Basic Research Methodology for Beginners	4-0-0	4
Minor/ DSE-5				
		Total Credits	20-0-0	20

	Minor/ DSE-5		
Course Code	Course Name	L-T-P **	Credits
MTL MI401	Advanced Calculus and Special Functions	4-0-0	4
MTL MI403	Numerical Methods	4-0-0	4

Semester-VIII

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Major	MTL MD402	Complex Analysis	4-0-0	4
Major	MTL MD404	Advanced Linear Algebra	4-0-0	4
Major	MTL MD406	Differential and Integral Equations	4-0-0	4
Major	MTL MD408	Functional Analysis	4-0-0	4
Minor/ DSE-6				
		Total Credits	20-0-0	20

OR

Broad Category of Course	Course Code	Course Title	L-T-P	Credits
Major	MTL MD408	Functional Analysis	4-0-0	4
Minor/ DSE-6				
Research Project/Dissertation	MTD PR402		12-0-0	12
		Total Credits	20-0-0	20

	Minor/ DSE-6		
Course Code	Course Name	L-T-P **	Credits
MTL MI402	Numerical Solution of Ordinary and Partial Differential Equations	4-0-0	4
MTL MI404	Advanced topics in Algebra	4-0-0	4