INTEGRATED MASTER'S DEGREE - COURSE STRUCTURE AND SYLLABUS

COURSE STRUCTURE

NEP Compliant Course Structure for Mathematics Major and Physics Minor

First Year Course Structure

Semester	Major Mandatory	Major Elective	Minor (Physics)	Open Elective (OE)	VSC, SEC	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Total Credits
I	M101 - Analysis I (4) M102 - Algebra I (2)		Classical Mech.I.(4)	Chemistry 1/ Biology 1 (2)	VSC-Discrete Math & Applications (2) SEC-Computer Lab. (2)	AEC-English Comm. (2) VEC-Digital & tech. sol. (2)	CC-Positive Psychology (2)	22
II	M201- Analysis II (4) M202 - Algebra II (Linear Algebra) (2)		Electro-magnetism (4)	Chemical Thermodynamics (4)	VSC-Num.Th.and Appl. to Cryptograph (2) SEC-Electronics Laboratory (2)	AEC-Environ. Sciences (2) IKS – Ancient Indian Maths (2)		22

List of Abbreviations

Ma	Major
Mi	Minor
OE	Open Elective (generic courses not from major or minor)
OJT	On Job Training
VSC	Vocational Skills Course
CC	Co-curricular Course
SEC	Skill Enhancement Course
AEC	Ability Enhancement Course
VEC	Value Education Course
CEP	Community Engagement Project
RP	Research Project
FP	Field Project
IKS	Indian Knowledge System

NEP Compliant Course Structure for Mathematics Major and Physics Minor

Second Year Course Structure

Semester	Major Mandatory	Major Elective	Minor (Physics)	Open Elective (OE)	VSC, SEC	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Total Credits
III	M301 - Analysis III (1- var) (4) M302 - Algebra III (Groups & Rings) (4)		Classical Mech. II (4)	Biochemistry – 1/Statistical tech.(4)	VSC - Ordinary Differential Eqns (2)	AEC: Scientific Writing (2)	CC: Cultural activity (2)	22
IV	M401 - Analysis IV (sev. var.) (4) M403-Topology I (4)		Quantum Mech. 1 (4)	Spectroscopy I/ Biology IV (2)	VSC – Adv. Linear Alg. & Appl. II (2) SEC - Intro to Python (2)	VEC-Ethics and IPR (2)	Field Project (2)	22

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Third Year Mathematics Course Structure

SEMESTER –V (August to November)

Code	Subject (Credits)
M501	Analysis-III (Measure and Integration) (5)
M502	Algebra-III (Field Theory) (5)
M503	Topology-II (5)
M504	Graph Theory (5)
PML501	Numerical Methods Laboratory (4)
G501	Environmental Science (2)
Total Credits	**26**

SEMESTER –VI (January -April)

Code	Subject (Credits)
M601	Analysis-IV (Fourier Analysis) (5)
M602	Algebra-IV (Module Theory) (5)
M603	Differential equations and Special Functions (6)
M604	Probability Theory (5)
H601	Humanities and Social Sciences (3)
Total Credits	**24**

Fourth YEAR Mathematics Course Structure

SEMESTER –VII (August to November)

Code	Subject (Credits)
M701	Functional Analysis (5)
M702	Commutative Algebra (5)
M703	Algebraic Topology (5)
M704	Differential Geometry and Applications (5)
MPr701	Project (4)
Total Credits	**24**

SEMESTER –VIII (January to April)

Code	Subject (Credits)
M801	Particle Differential Equations (5)
M802	Algebraic Number Theory (5)
M803	Differential Topology (5)
M804	Computational Mathematics (5)
MPr801	Project (6)
Total Credits	**26**

Fifth Year Mathematics Course Structure

SEMESTER –IX (August to November)

Code	Subject
MPr901	Project
Total Credits	**25**

SEMESTER –X (January to April)

Code	Subject (Credits)
ME100*	Elective I (5)
ME100*	Elective II (5)
ME100*	Elective III (5)
MPr1001	Project (8)
Total Credits	**3 electives out of which one may be a project (10+8=18 credits)**