Proposed Scheme of Programme for
Dual Degree B.Sc. (Hons) Mathematics – M.Sc. Mathematics
under Choice Based Credit System (w.e.f. 2016-2017)

Semester-I

Course Opted	**Paper Code**	**Nomenclature**	**Credit**	**Hours/ Week**	**Marks**		
					External	**Internal**	**Total**
Ability Enhancement Compulsory Course-I	BXL 101	English	2	2	70	30	100
Ability Enhancement Compulsory Course-II	BXL 102	Environmental Sciences	2	2	70	30	100
Bridge Course-I	BML 101	Elementary Mathematics - I	4	4	70	30	100
Core Course-I	BML 102	Mathematics – I: Basic Algebra	4	4	70	30	100
Generic Elective-I	BPL 101	Physics-I: Mechanics	4	4	70	30	100
Generic Elective-II	BCL 101	Chemistry-I	4	4	70	30	100
Generic Elective-III	BBL 101	Elementary Biology-I	4	4	70	30	100
Generic Elective Practical-I	BPP 101	Physics Lab-I	2	4	70	30	100
Generic Elective Practical-II	BCP 101	Chemistry lab-I	2	4	70	30	100
Generic Elective Practical-III	BBP 101	Biology Lab	2	4	70	30	100
Total Credits = 26, Total hours =32							

Note: (i) Students, who have not studied Mathematics at 10+1 and 10+2 level, will opt the paper BML 101 and students, who have studied Mathematics at 10+1 and 10+2 level, will opt the paper BML 102.

(ii) Paper code BML 101 is offered by the Dept. of Mathematics for the students of other Departments.

(iii) Semesters I and II will be common for all the four programmes.

Semester-II

Course Opted	Paper Code	Nomenclature	Credit	Hours/ Week	Max. Marks		
					External	Internal	Total
Ability Enhancement Compulsory Course-III	BXL 201	Hindi	2	2	70	30	100
Bridge Course-II	BML 201	Elementary Mathematics – II	4	4	70	30	100
Core Course-II	BML 202	Mathematics-II: Calculus	4	4	70	30	100
Generic Elective-IV	BPL 201	Physics –II: Waves and Optics	4	4	70	30	100
Generic Elective-V	BCL 201	Chemistry – II	4	4	70	30	100
Generic Elective- VI	BBL 201	Elementary Biology - II	4	4	70	30	100
Generic Elective-VII	BXL 202	Computer Science	2	2	70	30	100
Generic Elective Practical- IV	BPP 201	Physics Lab - II	2	4	70	30	100
Generic Elective Practical- V	BCP 201	Chemistry Lab - II	2	4	70	30	100
Generic Elective Practical- VI	BXP 201	Computer Science-Lab	2	4	70	30	100
Total Credits = 26, Total hours = 32							

Note: (i) Students, who have not studied Mathematics at 10+1 and 10+2 level, will opt the paper BML 201 and students, who have studied Mathematics at 10+1 and 10+2 level, will opt the paper BML 202.

(ii) Paper code BML 201 is offered by the Dept. of Mathematics for the students of other Departments.

Semester-III

Course Opted	**Paper Code**	**Nomenclature**	**Credit**	**Hours/ Week**	**Max. Marks**		
					External	**Internal**	**Total**
Core Course- III	BML 301	Number Theory and Trigonometry	5	5	70	30	100
Core Course -IV	BML 302	Ordinary Differential Equations	5	5	70	30	100
Core Course- V	BML 303	Advanced Calculus	5	5	70	30	100
Core Course -VI	BML 304	Vector Calculus	5	5	70	30	100
Core Course- VII	BML 305	Mathematical Statistics	5	5	70	30	100
Skill Enhancement Course- I	BML 306	Special Functions-I	2	2	36	14	50
Total Credits = 27, Total hours = 27							

Semester-IV

Course Opted	Paper Code	Nomenclature	Credit	Hours/ Week	Max. Marks		
					External	Internal	Total
Core Course -VIII	BML 401	Solid Geometry	5	5	70	30	100
Core Course- IX	BML 402	Transform Techniques	5	5	70	30	100
Core Course- X	BML 403	Elementary Partial Differential Equations	5	5	70	30	100
Core Course- XI	BML 404	Statics	5	5	70	30	100
Core Course- XII	BML 405	Operations Research-I	5	5	70	30	100
Skill Enhancement Course- II	BML 406	Special Functions-II	2	2	36	14	50
Total Credits = 27, Total hours = 27.							

Semester-V

Course Opted	Paper Code	Nomenclature	Credit	Hours /Week	Max. Marks		
					External	Internal	Total
Core Course- XIII	BML 501	Real Analysis	5	5	70	30	100
Core Course- XIV	BML 502	Groups and Rings	5	5	70	30	100
Core Course- XV	BML 503	Programming in C & Numerical Methods	5	5	70	30	100
Core Course Practical- XV	BMP 504	Programming in C & Numerical Methods - Lab	2	4	35	15	50
Discipline Specific Elective -I	BML 505	Sequences and Series	5	5	70	30	100
Discipline Specific Elective- II	BML 506	Operations Research-II	5	5	70	30	100
Total Credits = 27, Total hours = 29							

Semester-VI

Course Opted	**Paper Code**	**Nomenclature**	**Credit**	**Hours/ Week**	**Max. Marks**		
					External	**Internal**	**Total**
Core Course -XVI	BML 601	Real and Complex Analysis	5	5	70	30	100
Core Course -XVII	BML 602	Linear Algebra	5	5	70	30	100
Core Course -XVIII	BML 603	Numerical Analysis	5	5	70	30	100
Core Course Practical-XVIII	BMP 604	Numerical Analysis - Lab	2	4	35	15	50
Discipline Specific Elective -III	BML 605	Dynamics	5	5	70	30	100
Discipline Specific Elective -IV	BML 606	Mathematical Modeling	5	5	70	30	100
Total Credits = 27, Total Hours = 29.							

Paper Code	Nomenclature	No. of Credits	External Marks	Internal Marks	Total Marks
Semester VII					
MAL 511	Algebra	5 credits (5-0-0)	70	30	100
MAL 512	Real Analysis	5 credits (5-0-0)	70	30	100
MAL 513	Mechanics	5 credits (5-0-0)	70	30	100
MAL 514	Ordinary Differential Equations-I	5 credits (5-0-0)	70	30	100
MAL 515	Complex Analysis-I	5 credits (5-0-0)	70	30	100
MAL 516	Programming with FORTRAN (Theory)	5 credits (5-0-0)	70	30	100
MAP 517	Programming with FORTRAN (Practical)	1.5 credits (0-0-3)	70	30	100
	Total Credits	**31.5 credits**			
Semester VIII					
MAL 521	Abstract Algebra	5 credits (5-0-0)	70	30	100
MAL 522	Measure & Integration Theory	5 credits (5-0-0)	70	30	100
MAL 523	Methods of Applied Mathematics	5 credits (5-0-0)	70	30	100
MAL 524	Ordinary Differential Equations-II	5 credits (5-0-0)	70	30	100
MAL 525	Complex Analysis-II	5 credits (5-0-0)	70	30	100
MAL 526	Programming in C (Theory)	5 credits (5-0-0)	70	30	100
MAP 527	Computing Lab-I	1.5 credits (0-0-3)	70	30	100
	Total Credits	**31.5 credits**			
Semester IX					
MAL 631	Topology	5 credits (5-0-0)	70	30	100
MAL 632	Partial Differential Equations	5 credits (5-0-0)	70	30	100
MAL 633	Mechanics of Solids-I	5 credits (5-0-0)	70	30	100
MAP 634	Computing Lab-II	1.5 credits (0-0-3)	70	30	100
Programme Elective-I		5 credits (5-0-0)	70	30	100
Programme Elective-2		5 credits (5-0-0)	70	30	100
Open Elective		4 credits (4-0-0)	70	30	100
	Total Credits	**30.5 credits**			
Semester X					
MAL 641	Functional Analysis	5 credits (5-0-0)	70	30	100
MAL 642	Differential Geometry	5 credits (5-0-0)	70	30	100
MAL 643	Mechanics of Solids-II	5 credits (5-0-0)	70	30	100
Programme Elective-3		5 credits (5-0-0)	70	30	100
Programme Elective-4		5 credits (5-0-0)	70	30	100
MAP 648	Computing Lab-3	1.5 credits (0-0-3)	70	30	100
	Total Credits	**26.5 credits**			

*Programme Electives

Semester-IX					
MAL 635	Analytic Number Theory	5 credits (5-0-0)	70	30	100
MAL 636	Fluid Mechanics	5 credits (5-0-0)	70	30	100
MAL 637	Advanced Discrete Mathematics	5 credits (5-0-0)	70	30	100
MAL 638	Difference Equations	5 credits (5-0-0)	70	30	100
MAO 630	Open Elective	4 credits (4-0-0)	70	30	100
Semester-X					
MAL 644	Integral Equations	5 credits (5-0-0)	70	30	100
MAL 645	Advanced Fluid Mechanics	5 credits (5-0-0)	70	30	100
MAL 646	Bio-Mechanics	5 credits (5-0-0)	70	30	100
MAL 647	Algebraic Coding Theory	5 credits (5-0-0)	70	30	100

*Programme/ open electives can be offered subject to availability of requisite resources/faculty in the department.

Total Credits: 120 +160 = 280