M.Sc. (Hons) in Mathematics (Single degree) course structure

Semester-wise Pattern for Students Admitted to M.Sc. (Hons.) Mathematics Programme

Year	First Semester			U	Second Semester			U
I	BIO	F110	Biology Laboratory	1	MATH	F112	Mathematics II	3
	BIO	F111	General Biology	3	ME	F110	Workshop Practice	2
	CHEM	F110	Chemistry Laboratory	1	CS	F111	Computer Programming	4
	CHEM	F111	General Chemistry	3	EEE	F111	Electrical Sciences	3
	MATH	F111	Mathematics I	3	BITS	F112	Technical Report Writing	2
	PHY	F110	Physics Laboratory	1	MATH	F113	Probability and Statistics	3
	PHY	F111	Mechanics, Oscillations and Waves	3	BITS	F111	Thermodynamics	3
	BITS	F110	Engineering Graphics	2				
				17				20
II	MATH	F211	Mathematics III	3	ECON	F211	Principles of Economics	3
			Humanities Electives	3(min)			or	or
	MATH	F212	Optimization	3	MGTS	F211	Principles of Management	3
	MATH	F213	Discrete Mathematics	3			Humanities Electives	3(min)
	MATH	F214	Elementary Real Analysis	3	MATH	F241	Mathematical Methods	3
	MATH	F215	Algebra I	3	MATH	F242	Operations Research	3
					MATH	F243	Graphs & Networks	3
					MATH	F244	Measure & Integration	3
				18(min)				18(min)
Summer			BITS F221 Practice School – I (for PS Option Only)					
III			Open/Humanities Electives	3to6			Open/Humanities Electives	0to3
	MATH	F311	Introduction to Topology	3				
	MATH	F312	Ordinary Differential Equations	3	MATH	F341	Introduction to Functional Analysis	3
	MATH	F313	Numerical Analysis	3	MATH	F342	Differential Geometry	3
			Discipline Electives	6	MATH	F343	Partial Differential Equations	3
							Discipline Electives	9
				18/21				18/21
IV			Open Electives	8to14	BITS	F412	Practice School-II	20
							or	or
					BITS	F421T	Thesis	16
							or	
							Thesis (9) and Electives (6 to 9)	15to18
				8/14				15/20

Discipline Core - 42 Units (14 Courses)

Discipline Electives - 15 Units (5 Courses)

Note: This is operative pattern for the students who are admitted from August 2011 onwards as approved by the Senate-appointed committee, subject to change if the situation warrants.

A specimen of M.Sc. (Hons) in Mathematics with dual degree course structure

(Similar structure exists for dual degree B. E. in respectively Chemical Engineering, Civil Engineering, Electrical Engineering and Electronics, Mechanical Engineering, Electronics and Instrumentation, Manufacturing, etc.)

Semester-wise pattern for composite Dual Degree Programmes (M.Sc.(Hons) Mathematics with B.E.(Hons) Computer Science)								
Year	First Semester			U	Second Semester			U
I	Same as First degree Programme				Same as First degree Programme			
II	First Semester			U	Second Semester			U
	MATH	F211	Mathematics III	3	ECON	F211	Principles of Economics	3
	MATH	F212	Optimization	3			or	
	MATH	F213	Discrete Mathematics	3	MGTS	F211	Principles of Management	3
	MATH	F214	Elementary Real Analysis	3	MATH	F241	Mathematical Methods	3
					MATH	F242	Operations Research	3
	MATH	F215	Algebra I	3	MATH	F243	Graphs & Networks	3
			Humanities Elective	3	MATH	F244	Measure & Integration	3
							Humanities Electives	5
				18				20
Summer	BITS F221 Practice School -1 (for PS Option Only)							
III	First Semester			U	Second Semester			U
	MATH	F311	Introduction to Topology	3	MATH	F341	Introduction to Functional Analysis	3
	MATH	F312	Ordinary Differential Equations	3	MATH	F342	Differential Geometry	3
	MATH	F313	Numerical Analysis	3	MATH	F343	Partial Differential Equations	3
	CS	F215	Digital Design	4	CS	F241	Microprocessors & Interfacing	4
	CS	F214	Logic in Computer Science	3	CS	F212	Database Systems	4
	CS	F213	Object Oriented Programming	4	CS	F211	Data Structures & Algorithms	4
				20				21
IV	First Semester			U	Second Semester			U
	CS	F351	Theory of Computation	3	CS	F363	Compiler Construction	3
	CS	F372	Operating Systems	3	CS	F364	Design and Analysis of Algorithms	3
	CS	F342	Computer Architecture	4	CS	F303	Computer Networks	4
	CS	F301	Principles of Programming Languages	2			Fist Discipline Elective	6
			First Discipline Electives	3			Second Discipline Electives	6
			Second Discipline Electives	6				
				21				22
V	First Semester			U	Second Semester			U
	First Discipline Electives			6	BITS F412 Practice School - II			20
	BTS F423T Thesis			9				

Note: This is operative pattern for the students who are admitted from August 2011 onwards as approved by the Senate-appointed committee, subject to change if the situation warrants.

List of discipline core courses

S. No.	Course No.	Course Title	L	P	U
1.	MATH F212	Optimization	3	0	3
2.	MATH F213	Discrete Mathematics	3	0	3
3.	MATH F214	Elementary Real Analysis	3	0	3
4.	MATH F215	Algebra-I	3	0	3
5.	MATH F241	Mathematical Methods	3	0	3
6.	MATH F242	Operations Research	3	0	3
7.	MATH F243	Graphs and Networks	3	0	3
8.	MATH F244	Measure & Integration	3	0	3
9.	MATH F311	Introduction to Topology	3	0	3
10.	MATH F312	Ordinary Differential Equations	3	0	3
11.	MATH F313	Numerical Analysis	3	0	3
12.	MATH F341	Introduction to Functional Analysis	3	0	3
13.	MATH F342	Differential Geometry	3	0	3
14.	MATH F343	Partial Differential Equations	3	0	3

List of discipline elective courses:

S. N.	Course No	Course Title	L	P	U
1.	BITS F343	Fuzzy Logic and Applications	3	0	3
2	MATH F231	Number Theory	3	0	3
3	MATH F441	Discrete Mathematical Structures	3	0	3
4	MATH F314	Algebra-II	3	0	3
5	MATH F471	Nonlinear Optimization	3	0	3
6	MATH F481	Commutative Algebra	3	0	3
7	MATH F354	Complex Analysis	3	0	3
8	CS F364	Design and Analysis of Algorithms	3	0	3
9	MATH F353	Statistical Inference and Applications	3	0	3
10	BITS F463	Cryptography	3	0	3
11	MATH F421	Combinatorial Mathematics	3	0	3
12	MATH F431	Distribution Theory	3	0	3