Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for M. Sc. In Applied Mathematics
(Effective from Academic Session 2018-2019)

COURSE OBJECTIVE:

1.   To   impart fundamental knowledge, thinking skills and technical skills for superior mastery in the areas of mathematical science and applications.

2.   Enable the students to be well placed in leading business organizations anywhere in the world.

COURSE DURATION:
The course duration is of 24 months spread over four semesters with credit hours as per the WBUT norms. The course has sufficient emphasis on mathematical skills as well along with its science and management parts.

COURSE CURRICULUM PLAN:
The Course Curriculum is based on comparative analysis of existing MSc. Applied mathematics and Pure Mathematics curriculums of other Universities, IITs and NITs. The curriculum has sufficient exposure to hands-on skills and is much more directed towards higher employability. It is also well suited for upward accommodation of science graduates and Mathematics graduates.

Eligibility: Any Mathematics Graduate/ Any Graduate in Science with Mathematics as a core subject and Any Engineering Graduate.

Summary

Semester No	Contact hr/wk	Credit
1	31	24
2	31	21
3	23	22
4	21	22
Total	106	89

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Semester - I

A. THEORY

SL. NO.	CODE	THEORY	L	T	P	TOTAL	CREDITS
1	MAM101	Abstract and Linear Algebra	4	1	-	5	4
2	MAM 102	Real Analysis	4	1	-	5	4
3	MAM 103	Differential Equations	4	1		5	4
4	MAM 104	Numerical Methods	4	1		5	4
5	MAM105	Data Structure and Algorithms	4	1		5	4
Total of Theory						25	20

B. PRACTICAL

			L	T	P	TOTAL	CREDITS
6	MAM 191	Numerical Methods Lab	-	-	3	3	2
7	MAM 192	Data Structure and Algorithms Lab Using C	-	-	3	3	2
Total of Practical						6	4
Total of Semester						31	24

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Semester - II

A. THEORY							
SL. NO.	CODE	THEORY	CONTACTS PERIODS/WEEK				CREDITS
			L	T	P	TOTAL	
1	MAM 201	Probability and Statistics	4	1		5	3
2	MAM 202	Classical Mechanics	4	1	-	5	3
3	MAM 203	RDBMS	4	1		5	3
4	MAM 204	Complex Analysis	4	1		5	3
5	MAM 205	Operations Research	4	1		5	3
Total of Theory						25	15
B. PRACTICAL							
6	MAM 291	OR Lab	-	-	3	3	3
7	MAM292	RDBMS Lab	-	-	3	3	3
Total of Practical						6	6
Total of Semester						31	21

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Semester - III

SL. NO.	CODE	THEORY	L	T	P	TOTAL	CREDITS
A. THEORY							
						CONTACTS PERIODS/WEEK	
1	MAM 301	Functional Analysis	4	1		5	4
2	MAM 302	Discrete Mathematics	4	1	-	5	4
3	MAM 303	Information Theory and Decision Analysis	4	1		5	4
4	MAM 304	Continuum Mechanics	4	1		5	4
5	MAM E 305	Elective I	4	1		5	4
Total of Theory						25	20
B. PRACTICAL							
6	MAM 391	Seminar	-	-	3	3	2
Total of Practical						3	2
Total of Semester						28	22

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Semester – IV

A. THEORY

SL. NO.	CODE	THEORY	CONTACTS PERIODS/WEEK				CREDITS
			L	T	P	TOTAL	
1	MAM 401	Integral Transformation and Integral Equation	4	1		5	4
2	MAM E 402	Elective II (Choose any two from 402-A,402-B,402-C,402-D,402-E)	4+4	1+1	-	5+5	4+4
Total of Theory						15	12

B. PRACTICAL

SL. NO.	CODE		L	T	P	TOTAL	CREDITS
6	MAM 491	Project Dissertation	-	-	9	9	6
7	MAM 492	Viva Voce	-	-	-	-	4
Total of Practical						9	10
Total of Semester				24			22

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Elective Set	Course Code	Topic
I (Choose any one)	MAM E305 A	Financial Mathematics
	MAM E305B	Advanced Optimization Techniques
	MAM E305 C	Probability and Measure
II(Choose any two from the set)	MAM E 402 A	Mathematical Biology
	MAM E 402 B	Software Engineering
	MAM E 402 C	Network Security
	MAM E 402 D	Dynamical System
	MAM E 402 E	Cryptography