



Maulana Abul Kalam Azad University of Technology, West Bengal

Course: M.Sc. in Applied Chemistry

Duration: 2 Years; Level: Post graduation; Type: Degree

SEMESTER - I

Sl. No.	Paper code	Course name	Course type	Marks	Hours/credit			
					L	T	P	C
1.	MSAC-101	Biochemistry & Bioinorganic Chemistry	CF	100	3	0	0	3
2.	MSAC -102	Organic Chemistry I	CC	100	3	0	0	3
3.	MSAC -103	Statistical methods for Chemical and Biochemical Applications	DSE	50	2	0	0	2
4.	MSAC -104	Computer Aided Advanced Physical Chemistry	CC	100	3	0	0	3
5.	MSAC -105	Analytical Lab Techniques	CC	100	3	0	0	3
6.	MSAC-106	Research Methodology (From MOOC basket / 8-12 weeks)	VAC	100	2	0	0	2
7.	MSAC-191(Lab)	Lab Techniques for quantitative and qualitative analysis	CC	100	0	0	6	3
8.	MSAC -192(Lab)	Introduction to programming and simulation applications for Physical/Chemical/Biological Problems	CC	100	0	0	6	3
9.	MSAC-193(Lab)	Computer Aided Determination of Stereo-chemical outcome of complex chemical reaction	CC	50	0	0	4	2
Total				800	24			

SEMESTER - II

Sl. No.	Paper code	Course name	Course type	Marks	Credit			
					L	T	P	C
1.	MSAC -201	Quantum Chemistry	CC	100	3	0	0	3
2.	MSAC-202	Statistical Mechanics	CC	100	3	0	0	3
3.	MSAC -203	Organic Chemistry II	CC	100	3	0	0	3
4.	MSAC -204	Nano science and technology	DSE	100	3	0	0	3
5.	MSAC-205	Computational Methods	CC	100	3	0	0	3
6.	MSAC -206	Natural Products and Medicinal Chemistry	IDE	100	3	0	0	3
7.	MSAC -291 (Lab)	Computational methods in Chemistry	CC	100	0	0	6	3
8.	MSAC -292 (Lab)	Advanced Organic Chemistry Lab	CC	100	0	0	6	3
Total				800	24			

SEMESTER - III

Sl. No.	Paper code	Course name	Course type	Marks	Credit			
					L	T	P	C
1.	MSAC -301	Bioorganic and Supramolecular Chemistry	CC	100	3	0	0	3
2.	MSAC -302	Industrial Chemistry	CF	100	3	0	0	3
3.	MSAC -303	Elective I	EF	100	3	0	0	3
4.	MSAC -304	Elective II	EF	100	3	0	0	3
5.	MSAC-391	Industrial Exposure	VAC	50	0	0	2	2
6.	MSAC-392	Mini Project and Seminar Presentation	SEC	50	0	0	2	2
7.	MSAC-393 (Lab)	Programming Lab - Python	SEC	100	0	0	4	2
8.	MSAC -394 (Lab)	Preparation of complex materials and their characterization by physiochemical techniques	CC	100	0	0	6	3
9.	MSAC -395 (Lab)	Spectroscopic Analysis Lab	CC	100	0	0	6	3
Total				800	24			

SEMESTER - IV

Sl. No.	Paper code	Course name	Course type	Marks	Credit			
					L	T	P	C
1.	MSAC -401	Elective III	EF	100	3	0	0	3
2.	MSAC -491 (Lab)	Project Stage-I (Term paper focus on project & Seminar)	--	20	5			
3.	MSAC -492 (Lab)	Project Stage-II (Dissertation & Viva voce)	--	80	16			
Total				200	24			

CC: Core Course, **VAC:** Value Added Course, **SEC:** Skill Enhancement Course, **IDE:** Interdisciplinary Course, **DSE:** Discipline Specific Course, **EF:** Elective Foundation, **CF:** Compulsory Foundation.

Electives:

1. Cheminformatics
2. Photochemistry and spectroscopy
3. Pharmaceutical Chemistry
4. Water and Wastewater Treatment
5. Solid Waste Management and Air Pollution
6. Industrial Catalysis
7. Industrial & Environmental Pollution Management and Industrial Process Safety
8. Alternative and green energy, solar cell and perovskite
9. Food Chemistry
10. Sensor Development
11. Semiconductor devices

Semester	Course Hours/week	Marks	Course credit
I	32	800	24
II	30	800	24
III	28	800	24
IV	45	200	24
Total		2600	96