

## GRADUATE PROGRAM

### Curriculum for the Degree of M.Sc. in Chemistry

Graduate students must take a total of 30 graduate credit hours to qualify for the M.Sc. degree.

a) Three of the following courses (two in Fall and one in Spring Semesters):

- Advanced Organic Chemistry      3 Cr
- Advanced Inorganic Chemistry      3 Cr
- Advanced Analytical Chemistry      3 Cr
- Advanced Physical Chemistry      3 Cr

b) Two core courses in their field of study (6 Cr.), one in Fall and one in Spring Semesters .

c) Elective courses (6 Cr.)

d) Seminar (1 Cr.)

e) Thesis (8 Cr.).

For the non-thesis stream, the thesis is replaced by a comprehensive review of a subject in chemistry under the supervision of a faculty member (4 Cr.)

Specific courses shall be completed as follows:

#### **A) Analytical Chemistry**

##### **Semester I (Fall),**

2118582	Advanced Analytical Chemistry	3
2116571	Advanced Inorganic Chemistry	3
2112525	Advanced Organic Chemistry	3
2114551	Advanced Physical Chemistry	3
	One course from the major specific courses	3

##### **Semester II (Spring) Major specific Courses**

2118581	Advanced Electrochemistry	3
2118583	Physical and Chemical Methods of Separation	3
2118585	Atomic Spectroscopy	3
	Electives	3

##### **Semester III (Fall) Major specific Courses**

9010501-21	Seminar	1
9010600-01	Thesis	0
	(Elec.) Molecular Spectroscopy	3
2118584	(Elec.) Advanced Topics in Analytical Chemistry	3
2118586	(Elec.) Kinetics in Analytical Chemistry	3
2118587	(Elec.) Chromatography	2
2118588	(Elec.) Trace Analysis	3

##### **Semester IV (Spring)**

9010608-01	Thesis	8
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## B) Inorganic Chemistry

### Semester I (Fall),

2118582	Advanced Analytical Chemistry	3
2116571	Advanced Inorganic Chemistry	3
2112525	Advanced Organic Chemistry	3
2114551	Advanced Physical Chemistry	3
	One course from the major specific courses	3

### Semester II (Spring) Major specific Courses

2116573	Physical Inorganic Chemistry	3
2116577	Inorganic Spectroscopy	3
2116572	Kinetics & Mechanism of Inorg. Reactions	3
	Electives	3

### Semester III (Fall) Major specific Courses

9010501-21	Seminar	1
9010600-01	Thesis	0
2116574	(Elec.) Chemical Application of Group Theory	3
2116575	(Elec.) Synthesis and Characterization of Complex Compounds	3
2116578	(Elec.) Advanced Topics in Inorganic Chemistry	3

### Semester IV (Spring)

9010608-01	Thesis	8
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## C) Organic Chemistry

### Semester I (Fall),

2118582	Advanced Analytical Chemistry	3
2116571	Advanced Inorganic Chemistry	3
2112525	Advanced Organic Chemistry	3
2114551	Advanced Physical Chemistry	3
	One course from the major specific courses	3

### Semester II (Spring) Major specific Courses

2112526	Physical Organic Chemistry	3
2112527	Chemistry of Heterocyclic Compounds	3
	Electives	3

### Semester III (Fall) Major specific Courses

9010501-21	Thesis	0
9010600-01	Seminar	1
	Electives	6

### Semester IV (Spring)

9010608-01	Thesis	8
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## D) *Physical Chemistry*

### Semester I (Fall),

2118582	Advanced Analytical Chemistry	3
2116571	Advanced Inorganic Chemistry	3
2112525	Advanced Organic Chemistry	3
2114551	Advanced Physical Chemistry	3
	One course from the major specific courses	3

### Semester II (Spring) Major specific Courses

2114553	Quantum Chemistry II	3
2114552	Statistical Thermodynamics	3
2114554	Advanced Chemical Kinetics Theory	3
	Electives	3

### Semester III (Fall) Major specific Courses

9010501-21	Seminar	1
9010600-01	Thesis	0
2114558	(Elec.) Molecular Spectroscopy	3
2114557	(Elec.) Advanced Topics in Physical Chemistry	3
2114556	(Elec.) Surface Chemistry	3
2114559	(Elec.) Physical Chemistry of the Environment	3

### Semester IV (Spring)

9010608-01	Thesis	8
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