

## GRADUATE PROGRAM Ph.D. Program in Chemistry

Specific courses shall be completed as follows:

### A) Analytical Chemistry

*2110701	Lasers and their Applications in Chemistry	3
*2118784	Kinetics and Thermal Methods of Analysis	3
*2118781	Electrochemical Analyses in Nonaqueous Solvents	3
2118875	Statistical Analyses of Data & Chemometrics	3
2118786	Advanced Topics in Analytical Chemistry	3
2118788	Analytical Chemistry in Nonaqueous Solvents	3
2118783	New Methods in Instrumental Analysis	3
2118782	Radiation Methods of Analysis	3
2118787	Computer and Electronics in Chemistry	3
*9010701-21	Seminar	1
*9010709-01	English for Academic Purposes	0
*9010730-01	Comprehensive Exams 1	0
*9010740-01	Research Oral Presentation 1	0
*9010750-01	Research Oral Presentation 2	0
*9010725-01	Thesis (Applicants admitted before 1384/2005)	25
*9010820-01	Thesis (Applicants admitted after 1384/2005)	20

\*Core Courses

### B) Inorganic Chemistry

*2116771	Chemistry of Excited States and Reactive Intermediates	3
*2116774	Structure and Bonding in Inorganic Compounds	3
*2116775	Advanced Topics in Inorganic Chemistry (Inorganic Electrochemistry)	3
*2116777	Multinuclear NMR	3
2116772	Advanced Photochemistry	3
2116773	Chemistry of Inorganic Polymers	3
2116776	Kinetics of Coordination Compounds	3
2112736	Advanced NMR Spectroscopy	3
*9010701-21	Seminar	1
*9010709-01	English for Academic Purposes	0
*9010730-01	Comprehensive 1	0
*9010740-01	Research Oral Presentation 1	0
*9010750-01	Research Oral Presentation 2	0
*9010725-01	Thesis (Applicants admitted before 1384/2005)	25
*9010820-01	Thesis (Applicants admitted after 1384/2005)	20

\*Core Courses

### **C) Organic Chemistry**

*2112725	Recent Advances in Natural Products	3
*2112733	Reactive Intermediates in Organic Chemistry	3
*2112734	Advanced Polymer Chemistry	3
*2112736	Advanced NMR Spectroscopy	3
2112729	Advanced Heterocyclic Chemistry	3
2112731	Advanced Topics in Organic Chemistry	3
2112735	Stereochemistry	3
2112732	Synthesis and Application of Specific Polymers	3
2112737	Functionalized Polymers and Their Properties	3
*9010701-21	Seminar	1
*9010709-01	English for Academic Purposes	0
*9010730-01	Comprehensive 1	0
*9010740-01	Research Oral Presentation 1	0
*9010750-01	Research Oral Presentation 2	0
*9010725-01	Thesis (Applicants admitted before 1384/2005)	25
*9010820-01	Thesis (Applicants admitted after 1384/2005)	20

\*Core Courses

### **D) Physical Chemistry**

*2114755	Quantum Chemistry III	3
*2114751	Statistical Thermodynamics II	3
*2114752	Thermodynamics of Irreversible Processes	3
*2114756	Advanced Molecular Spectroscopy	3
2114753	Chemical Thermodynamics of Solids	3
2114754	Mathematics in Physical Chemistry	3
2114757	Advanced Topics in Physical Chemistry	3
2114758	Physical Chemistry of Macromolecules	3
2110706	Nano-thermodynamics	3
*9010701-21	Seminar	1
*9010709-01	English for Academic Purposes	0
*9010730-01	Comprehensive 1	0
*9010740-01	Research Oral Presentation 1	0
*9010750-01	Research Oral Presentation 2	0
*9010725-01	Thesis (Applicants admitted before 1384/2005)	25
*9010820-01	Thesis (Applicants admitted after 1384/2005)	20

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