(For students admitted in 2012-13 under the 4-year degree)

BSc in Chemistry

In addition to the requirements of their major programs, students are required to complete the University and School requirements for graduation. For details please refer to the respective sections on this website.

Major Requirements

Students MUST take the following courses prior to enrollment into the major

Major Pre-requisite course(s)

			Credit(s)
CHEM		Note: CHEM 1010 OR CHEM 1020	2-3
CHEM	1010	General Chemistry IA	3
CHEM	1020	General Chemistry IB	2
CHEM	1030	General Chemistry II	3

Required Course(s)

CHEM	1050	Laboratory for General Chemistry I	1
CHEM	1055	Laboratory for General Chemistry II	1
CHEM	2110	Organic Chemistry I	3
CHEM	2150	Organic Chemistry Laboratory	1
CHEM	2210	Inorganic Chemistry I	3
CHEM	2250	Inorganic Chemistry Laboratory	1
CHEM	2310	Fundamentals of Analytical Chemistry	3
CHEM	2350	Analytical Chemistry Laboratory	1
CHEM	2410	Physical Chemistry I: Equilibrium Thermodynamics and Statistical Mechanics	3
CHEM	2450	Physical Chemistry Laboratory	1
CHEM	3120	Organic Chemistry II	3
CHEM	3220	Inorganic Chemistry II	3
CHEM	3320	Instrumental Analysis	3
CHEM	3420	Physical Chemistry II	3
CHEM	3550	Synthetic Chemistry Laboratory	2
CHEM	3555	Molecular Characterization Chemistry Laboratory	2
CHEM	4690**	Capstone Project	4
MATH	2351	Introduction to Differential Equations	3

Student may opt to graduate with or without an option. Students who take an option MUST complete all requirements specified in addition to the major requirements.

Option(s)

Biomolecular Chemistry Option

Required Course(s)

CHEM	4110	Structural Elucidation in Organic Chemistry	3
CHEM	4120	Biomolecular Chemistry	3
CHEM	4130	Medicinal Chemistry	3
CHEM	4150**	Biomolecular Synthesis Laboratory	2
CHEM	4155**	Biomolecular Characterization Laboratory	2

Elective Course(s)

CHEM		Chemistry Electives (Courses from the specified elective list)	2
CHEM	4140	Intermediate Organic Chemistry	3
CHEM	4210	Solid State Chemistry	3
CHEM	4220	Materials Chemistry	3
CHEM	4230	Materials Characterization Method	3
CHEM	4240	Intermediate Inorganic Chemistry	3
CHEM	4250**	Materials Preparation Laboratory	2
CHEM	4255**	Materials Characterization Laboratory	2
CHEM	4310	Environmental Chemistry	3
CHEM	4320	Environmental Analytical Chemistry	3
CHEM	4330	Separation Science	3
CHEM	4340	Bioanalytical Techniques	3
CHEM	4350**	Environmental Chemistry Laboratory	2
CHEM	4355**	Instrumental Analytical Chemistry Laboratory	2
CHEM	4430	Symmetry in Chemistry and Spectroscopy	3
CHEM	4550**	Advanced Synthetic Chemistry Laboratory	2
CHEM	4555**	Advanced Molecular Characterization Laboratory	2
CHEM	4620	Organometallic Chemistry	3
CHEM	4640	Chemistry for Advanced Solar Cell Technologies	3
CHEM	4680	Undergraduate Research	3

Environmental and Analytical Chemistry Option

Required Course(s)

CHEM	4310	Environmental Chemistry	3
CHEM	4320	Environmental Analytical Chemistry	3
CHEM	4330	Separation Science	3
CHEM	4350**	Environmental Chemistry Laboratory	2
CHEM	4355**	Instrumental Analytical Chemistry Laboratory	2

Elective Course(s)

CHEM		Chemistry Electives (Courses from the specified elective list)	2
CHEM	4110	Structural Elucidation in Organic Chemistry	3
CHEM	4120	Biomolecular Chemistry	3
CHEM	4130	Medicinal Chemistry	3

CHEM	4140	Intermediate Organic Chemistry	3
CHEM	4150**	Biomolecular Synthesis Laboratory	2
CHEM	4155**	Biomolecular Characterization Laboratory	2
CHEM	4210	Solid State Chemistry	3
CHEM	4220	Materials Chemistry	3
CHEM	4230	Materials Characterization Method	3
CHEM	4240	Intermediate Inorganic Chemistry	3
CHEM	4250**	Materials Preparation Laboratory	2
CHEM	4255**	Materials Characterization Laboratory	2
CHEM	4340	Bioanalytical Techniques	3
CHEM	4430	Symmetry in Chemistry and Spectroscopy	3
CHEM	4550**	Advanced Synthetic Chemistry Laboratory	2
CHEM	4555**	Advanced Molecular Characterization Laboratory	2
CHEM	4620	Organometallic Chemistry	3
CHEM	4640	Chemistry for Advanced Solar Cell Technologies	3
CHEM	4680	Undergraduate Research	3

Material Chemistry Option

Required Course(s)

CHEM	4210	Solid State Chemistry	3
CHEM	4220	Materials Chemistry	3
CHEM	4230	Materials Characterization Method	3
CHEM	4250**	Materials Preparation Laboratory	2
CHEM	4255**	Materials Characterization Laboratory	2

Elective Course(s)

CHEM		Chemistry Electives (Courses from the specified elective list)	2
CHEM	4110	Structural Elucidation in Organic Chemistry	3
CHEM	4120	Biomolecular Chemistry	3
CHEM	4130	Medicinal Chemistry	3
CHEM	4140	Intermediate Organic Chemistry	3
CHEM	4150**	Biomolecular Synthesis Laboratory	2
CHEM	4155**	Biomolecular Characterization Laboratory	2
CHEM	4240	Intermediate Inorganic Chemistry	3
CHEM	4310	Environmental Chemistry	3
CHEM	4320	Environmental Analytical Chemistry	3
CHEM	4330	Separation Science	3
CHEM	4340	Bioanalytical Techniques	3
CHEM	4350**	Environmental Chemistry Laboratory	2
CHEM	4355**	Instrumental Analytical Chemistry Laboratory	2
CHEM	4430	Symmetry in Chemistry and Spectroscopy	3
CHEM	4550**	Advanced Synthetic Chemistry Laboratory	2
CHEM	4555**	Advanced Molecular Characterization Laboratory	2
CHEM	4620	Organometallic Chemistry	3
CHEM	4640	Chemistry for Advanced Solar Cell Technologies	3
CHEM	4680	Undergraduate Research	3

Pure Chemistry Option

Required Course(s)

CHEM	4430	Symmetry in Chemistry and Spectroscopy	3
CHEM	4550**	Advanced Synthetic Chemistry Laboratory	2
CHEM	4555**	Advanced Molecular Characterization Laboratory	2

Elective Course(s)

CHEM		Chemistry Electives (Courses from the specified elective list)	11
CHEM	4110	Structural Elucidation in Organic Chemistry	3
CHEM	4120	Biomolecular Chemistry	3
CHEM	4130	Medicinal Chemistry	3
CHEM	4140	Intermediate Organic Chemistry	3
CHEM	4150**	Biomolecular Synthesis Laboratory	2
CHEM	4155**	Biomolecular Characterization Laboratory	2
CHEM	4210	Solid State Chemistry	3
CHEM	4220	Materials Chemistry	3
CHEM	4230	Materials Characterization Method	3
CHEM	4240	Intermediate Inorganic Chemistry	3
CHEM	4250**	Materials Preparation Laboratory	2
CHEM	4255**	Materials Characterization Laboratory	2
CHEM	4310	Environmental Chemistry	3
CHEM	4320	Environmental Analytical Chemistry	3
CHEM	4330	Separation Science	3
CHEM	4340	Bioanalytical Techniques	3
CHEM	4350**	Environmental Chemistry Laboratory	2
CHEM	4355**	Instrumental Analytical Chemistry Laboratory	2
CHEM	4620	Organometallic Chemistry	3
CHEM	4640	Chemistry for Advanced Solar Cell Technologies	3
CHEM	4680	Undergraduate Research	3

***Remarks on course(s):*

- CHEM 4150: This is a new course subject to approval.
- CHEM 4155: This is a new course subject to approval.
- CHEM 4250: This is a new course subject to approval.
- CHEM 4255: This is a new course subject to approval.
- CHEM 4350: This is a new course subject to approval.
- CHEM 4355: This is a new course subject to approval.
- CHEM 4550: This is a new course subject to approval.
- CHEM 4555: This is a new course subject to approval.
- CHEM 4690: This is a new course subject to approval.