

INTEGRATED Ph.D. CURRICULUM

Department of Chemistry

Semester I

Course No.	Course Title	Credits
CHM301	Symmetry and Group Theory	4
CHM311	Organic Chemistry I	4
CHM313	Organic Chemistry Laboratory II	3
CHM325	Mathematical Methods for Chemists	4
CHM411	Physical Organic Chemistry	4
ECO500	Law Relating to Intellectual Property and Patents	1
Total Credits		20

Semester II

Course No.	Course Title	Credits
CHM312	Organic Chemistry II	4
CHM324	Physical Properties of Matter	4
CHM402	Applications of Modern Physical Methods	4
CHM426	Physical Chemistry Laboratory	3
CHM428	Quantum Mechanics and Spectroscopy	4
Total Credits		19

Semester III

Course No.	Course Title	Credits
CHM403	Inorganic Chemistry Laboratory	3
CHM421	Statistical Mechanics	4
CHM605	Bioinorganic Chemistry	4
CHM6**	Department Elective	4
CHM6**	Department Elective	4
Total Credits		19

INTEGRATED Ph.D. CURRICULUM

Department of Chemistry

Semester IV

Course No.	Course Title	Credits
CHM500	Project Work	8
*** **	Open Elective	4
*** **	Open Elective	4
Total Credits		16

Semester V

Course No.	Course Title	Credits
CHM500	Project Work	16
Total Credits		16

Semester VI

Course No.	Course Title	Credits
CHM500	Project Work	16
Total Credits		16

Semester VII Onwards

Course No.	Course Title	Credits
CHM800	Ph.D. Thesis	16
Total Credits		16

INTEGRATED Ph.D. CURRICULUM

Department of Mathematics

Semester I

Course No.	Course Title	Credits
MTH301	Group Theory	4
MTH303	Real Analysis I	4
MTH305	Elementary Number Theory	4
MTH311	Advanced Linear Algebra	4
MTH407	Complex Analysis I	4
ECO500	Law Relating to Intellectual Property and Patents	1
Total Credits		21

Semester II

Course No.	Course Title	Credits
MTH302	Rings and Modules	4
MTH304	General Topology	4
MTH306	Ordinary Differential Equations	4
MTH404	Measure and Integration	4
MTH ***	Department Elective	4
Total Credits		20

Semester III

Course No.	Course Title	Credits
MTH401	Fields and Galois Theory	4
MTH403	Real Analysis II	4
MTH405	Partial Differential Equations	4
MTH507	Introduction to Algebraic Topology	4
Total Credits		16

INTEGRATED Ph.D. CURRICULUM

Department of Mathematics

Semester IV

Course No.	Course Title	Credits
MTH503	Functional Analysis	4
MTH508	Introduction to Differentiable Manifolds and Lie Groups	4
MTH ***	Department Elective	4
MTH ***	Department Elective	4
Total Credits		16

Semester V

Course No.	Course Title	Credits
MTH700	MS Research	8
MTH ***	Department Elective/MS Research	4
MTH ***	Department Elective/MS Research	4
Total Credits		16

Semester VI

Course No.	Course Title	Credits
MTH700	MS Research	8
MTH ***	Department Elective/MS Research	4
MTH ***	Department Elective/MS Research	4
Total Credits		16

Note: In the 3rd Year (i.e. Semester V and VI), the students will be expected to take 2 classroom courses (Departmental Electives) along with the 24 credits of MS Research, split across the two semesters in any way.

Semester VII Onwards

Course No.	Course Title	Credits
MTH800	Ph.D. Thesis	16
Total Credits		16

INTEGRATED Ph.D. CURRICULUM

Department of Physics

Semester I

Course No.	Course Title	Credits
PHY301	Mathematical Methods I	4
PHY303	Quantum Mechanics I	4
PHY305	Classical Mechanics	4
PHY403	Condensed Matter Physics	4
*** **	Open Elective	4
ECO500	Law Relating to Intellectual Property and Patents	1
Total Credits		21

Semester II

Course No.	Course Title	Credits
PHY302	Mathematical Methods II	4
PHY304	Quantum Mechanics II	4
PHY306	Statistical Mechanics	4
PHY316	Seminar Course - 1	2
PHY338	Integrated Physics Laboratory II	4
PHY402	Atomic and Molecular Physics	4
Total Credits		22

Semester III

Course No.	Course Title	Credits
PHY401	Electrodynamics and Special Theory of Relativity	4
PHY405	Condensed Matter Physics Laboratory	3
PHY423	Seminar Course - 2	2
*** **	Open Elective	4
*** **	Open Elective	4
*** **	Open Elective	4
Total Credits		21

INTEGRATED Ph.D. CURRICULUM

Department of Physics

Semester IV

Course No.	Course Title	Credits
PHY404	Nuclear and Particle Physics	4
PHY428	Seminar Course - 3	2
PHY432	Integrated Ph.D. Project	4
*** **	Open Elective	4
*** **	Open Elective	4
*** **	Open Elective	4
Total Credits		19

Semester V

Course No.	Course Title	Credits
PHY701	Project Work	16
Total Credits		16

Semester VI

Course No.	Course Title	Credits
PHY702	Project Work	16
Total Credits		16

Semester VII Onwards

Course No.	Course Title	Credits
PHY800	Ph.D. Thesis	16
Total Credits		16