

## PhD COURSES

Courses: CHM-1XX.1

Courses: CHM-1XX.7

Colaba

TCIS

### Phd Core

Research Methodology	CHM-100.1	CHM-100.7
Mathematical Methods	CHM-101.1	CHM-101.7
Quantum Chemistry I	CHM-102.1	
Organic and Inorganic Chemistry	CHM-103.1	
Quantum Mechanics I		CHM-104.7
Lab Rotation	CHM-197.1	CHM-197.7
Project A (A1+A2)	CHM-198.1	CHM-198.7
Project B	CHM-199.1	CHM-199.7

### Phd Elective

Biochemistry Biophysics	CHM-105.1	CHM-105.7
Bio-inorganic Chemistry	CHM-106.1	
Optical Spectroscopy of Molecules	CHM-107.1	
Materials Chemistry	CHM-108.1	
Optical Spectroscopy and Microscopy	CHM-109.1	
Statistical Mechanics I		CHM-110.7
Organic Chemistry		CHM-111.7
Inorganic Chemistry		CHM-112.7
Spectroscopy of atoms and molecules		CHM-113.7
Basic Chemistry of Transition and Lanthanide Metal Ions		CHM-114.7
Chemistry of Main group elements and organometallic Chemistry		CHM-115.7
Numerical Methods and Algorithms in Chemistry Physics		CHM-116.7
Organic and Inorganic Chemistry		CHM-117.7
Biophysics		CHM-118.7
Biological Thermodynamics		CHM-119.7
Biochemistry		CHM-120.7
Chemical Biology 1		CHM-121.7

Principles of NMR Spectroscopy	CHM-200.1	CHM-200.7
Rate Processes in Chemistry and Biology	CHM-201.1	
NMR in Biological Systems	CHM-202.1	
Fluorescence Spectroscopy & Applications	CHM-203.1	
Biochemistry & Biophysics of Proteins	CHM-204.1	
Nanochemistry	CHM-205.1	
Advanced Inorganic & Bioinorganic Chemistry	CHM-206.1	
Symmetry in Chemistry	CHM-207.1	
Methods of Electronic Structure Theory	CHM-208.1	
Single Molecule Biology	CHM-209.1	
Medicinal Chemistry	CHM-210.1	
Physics and Chemistry of Materials: Bulk to Nano		CHM-210.7
Advanced Quantum Mechanics / Quantum Mechanics II		CHM-211.7
Basic Cell Biology		CHM-212.7
Fluorescence Methods in Cellular Biophysics		CHM-213.7
Advanced Topics in Organic Chemistry and Inorganic Chemistry		CHM-214.7
Molecular and nonlinear dynamics		CHM-215.7
Protein structure and synthesis		CHM-216.7
Solid State NMR		CHM-217.7
Mechanobiology		CHM-218.7
Advanced Mathematics		CHM-219.7
Electronic structure theory of matters		CHM-220.7
Magnetism		CHM-221.7
Molecular Dynamics Simulation and application in chemical Physics		CHM-222.7
Polymer Physics and Soft matter		CHM-223.7
Chemistry of materials based on p-block elements		CHM-224.7
Organic and Perovskite Materials		CHM-225.7
Supramolecular Chemistry		CHM-226.7
Quantum Thermodynamics		CHM-300.7

### Short Courses (Summer Courses)

C-Programming	CHM-251.1	
Mass spectrometry in chemistry and biology	CHM-252.1	
NMR Instrumentation	CHM-253.1	CHM-253.7
Computer Programming - Python	CHM-254.1	CHM-254.7
Data Science		CHM-255.7
Lab Safety	CHM-256.1	