Credit required for the M.Sc. degree in Physics

Mandatory courses – 25 credit points
Elective courses – 10 credit points
Total credit points – 35

First and second year mandatory courses:
77800 – ADVANCED QUANTUM THEORY 1 (4)
77802 - STATISTICAL MECHANICS 1 (4)
77805 –WEEKLY PHYSICS COLLOQUIUM (0)

Second year mandatory courses:
74442 - FINAL M.SC. EXAMINATION (0)
74443 - M.SC. THESIS (0)

Mandatory- minimum 17 credit points from the courses below, from at least three different groups:

Group A
77712 – ADVANCED ASTROPHYSICS: COSMOLOGY AND GALAXIES (5)
77909 – RELATIVITY AND GRAVITATION (5)
77938 – ADVANCED ASTROPHYSICS: STARS AND HIGH ENERGIES (5)

Group B
77801 – ADVANCED QUANTUM THEORY 2 (3)
77856 – ELEMENTARY PARTICLES (5)
77915 – QUANTUM FIELD THEORY I (4)

Group C
77728 – NON-LINEAR DYNAMICS OF CONTINUOUS MEDIA (3)
77962 – PLASMA PHYSICS: COLLECTIVE PHENOMENA (4)

Group D
77960 – SOLID STATE PHYSICS A: ELECTRONS, PHONONS & TRANSPORT (5)
77961 – SOLID STATE PHYSICS B: COLLECTIVE PHENOMENA (4)

Group E
77964 – NUCLEAR PHYSICS A (5) (This course is not being taught in 2014-2015)
77990 – INTRODUCTION TO GROUP THEORY IN PHYSICS (4)

Group J
76908 – THEORY OF NEURAL NETWORKS 1 (4)
77991 – PHASE TRANSITIONS AND CRITICAL PHENOMENA (5)

Elective Courses – 10 credit points*:
67596 – INTRODUCTION TO QUANTUM COMPUTATION (4) (This course is not being taught in 2014-2015)
76909 – THEORY OF NEURAL NETWORKS 2 (4)
77315 – INTRODUCTION TO PHYSICS WITH COMPUTER (4)
77320 – INTRODUCTION TO ELECTRONICS A – ANALOGICAL (4)
77410 – ELECTRONIC TRANSPORT IN QUANTUM SYSTEMS (2)
77525 – INTERSTELLAR GAS (2) (This course is not being taught in 2014-2015)
77616 – INTRODUCTION TO PARTICLE ACCELERATORS (3)
77619 – NEW IDEAS AND EXPERIMENTS IN QUANTUM THEORY (3)
77632 – BLACK HOLES (4) (This course is not being taught in 2014-2015)
77641 – CLASSICAL FIELD THEORY (4)
77664 – INTRODUCTION TO LIQUID CRYSTALS (2)
77695 – NUCLEAR ASTROPHYSICS: SYNTHESIS OF THE ELEMENTS (2) (This course is not being taught in 2014-2015)
77696 – LIGHT-MATTER INTERACTION (2) (This course is not being taught in 2014-2015)
77727 – HIGH ENERGY ASTROPHYSICS (2)
77732 – COMPUTATIONAL PHYSICS OF COMPLEX SYSTEMS (3)
77740 – QUANTUM OPTICS (2) (This course is not being taught in 2014-2015)
77750 – INTERDISCIPLINARY SEMINAR A (2)
77751 – INTERDISCIPLINARY SEMINAR B (2)
77807 – PHYSICS OF NANOSCALE STRUCTURES IN SEMICONDUCTORS (3)
77826 – ASTROPHYSICS OF COMPACT OBJECTS (2) (This course is not being taught in
2014-2015
77838 – MEDICAL PHYSICS (3)
77844 – STRING THEORY A (3)
77853 – MATERIALS PHYSICS-STRUCTURE, PROPERTIES & KINETICS (3)
77869 – GAUGE THEORIES AND STRONG INTERACTIONS (4) (This course is not being taught in 2014-2015)
77871 – PHYSICS OF SEMICONDUCTORS (3)
77891 – QUANTUM TECHNOLOGIES (4) (This course is not being taught in 2014-2015)
77897 – INTERACTION OF HIGH POWER LASERS WITH MATTER (2) (This course is not being taught in 2014-2015)
77907 – STRING THEORY B (3) (This course is not being taught in 2014-2015)
77911 – PHYSICAL IMPLEMENTATIONS OF QUANTUM INFORMATION (2)
77916 – QUANTUM FIELD THEORY II (4)

* Courses not from this list demand approval of the M.Sc. advisor