Curriculum Structure

2023.05.24

	1ST Year of Master Degree	2ND Year of Master Degree	1ST of PhD Program
Core Curriculum	● QUANTUM MECHANICS [3] ● INTRODUCTION TO ELECTRODYNAMICS [3] ● ELECTRODYNAMICS [3] ● CLASSICAL MECHANICS [3] ● STATISTICAL MECHANICS [3] ● ADVANCED QUANTUM MECHANICS [3] ● SEMINAR (I, II) [1,1]	● SEMINAR (III, IV) [1,1] ● SCIENTIFIC WRITING (I, II)[3,3]	● ADVANCED QUANTUM MECHANICS [3] ● ELECTRODYNAMICS [3] ● CLASSICAL MECHANICS [3] ● STATISTICAL MECHANICS [3] ● STUDIES IN SELECTED RESEARCH TOPICS (I, II) [2,2]
Topical Field Courses			
Theoretical and Computational Physics	■ CONDENSED MATTERPHYSIS (I, II) [3,3] ■ COMPUTATIONAL PHYSICS (I, II) [3,3] ■ PHYSICS OF SUPERCONDUCTORS [3] ■ TOPOLOGY IN PHYSICS [3] ■ QUANTUM MANY-BODY PHYSICS [3] ■ QUANTUM FIELD THEORY [3] ■ GRAVITATIONAL-WAVE PHYSICS [3] ■ RELATIVISTIC QUANTUM PHYSICS [3] ■ INDEPENDENT STUDIES IN STATISTICAL MECHANICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN COMPUTATIONAL MATERIAL PHYSICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN TOPOLOGICAL PHYSICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN DENSITY FUNCTIONAL THEORY (I, II) [3,3] ■ INDEPENDENT STUDIES IN SUPERCONDUCTIVITY (I, II) [3,3] ■ INDEPENDENT STUDIES IN SCIENCE OF INVISIBILITY（I, II）[3,3] ■ INDEPENDENT STUDIES IN NONLINEAR PHYSICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN RELATIVISTIC QUANTUM SPIN (I, II) [3,3] ■ INDEPENDENT STUDIES IN ELECTRONIC STRUCTURE CALCULATIONS (I, II) [3,3] ■ SEMINAR IN MACHINE LEARNING QUANTUM MATERIALS PHYSICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN NON-HERMITIAN QUANTUM MECHANICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN MACHINE LEARNING APPLICATIONS IN PHYSICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN TENSOR NETWORK AND NEURAL NETWORK APPLICATIONS IN PHYSICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN MANY-BODY PHYSICS AND NUMERICAL METHODS (I, II) [3,3]		
Condensed matter and Material Physics	■ CONDENSED MATTERPHYSIS (I, II) [3,3] ■ LOW TEMPERATURE PHYSICS [3] ■ PHYSICS OF MAGNETISM [3] ■ SPIN PHYSICS [3] ■ QUANTUM MANY-BODY PHYSICS [3] ■ ELECTRON MICROSCOPY [3] ■ SURFACE SCIENCE [3] ■ MANUFACTURING TECHNOLOGY OF SEMICONDUCTOR FOR NANO DEVICE [3] ■ SEMICONDUCTOR NANO DEVICE PHYSICS [3] ■ ADVANCED LIGHT SOURCE AND SPECTROSCOPY [3] ■ CONDENSED MATTER PHYSICS AND ITS APPLICATIONS [3] ■ INDEPENDENT STUDIES IN LOW TEMPERATURE PHYSICS (I, II) [3,3] ■ SPECIAL TOPICS IN THIN FILM PHYSICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN SPIN PHYSICS (I, II) [3,3] ■ SEMINAR IN QUANTUM STRUCTURES(I, II) [3,3] ■ SEMINAR IN OPTOELECTRONIC SEMICONDUCTOR PHYSICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN NON-LOCAL SPIN VALVE (I, II) [3,3] ■ INDEPENDENT STUDIES IN COHERENT IMAGING (I, II) [3,3] ■ INDEPENDENT STUDIES IN LOW-DIMENSIONAL OPTOELECTRONIC MATERIALS (I, II) [3,3] ■ INDEPENDENT STUDIES IN TOPOLOGICAL PHYSICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN SEMICONDUCTOR (I, II) [3,3] ■ INDEPENDENT STUDIES IN QUANTUM COMPUTING (I, II) [3,3] ■ INDEPENDENT STUDIES IN LOW-DIMENSIONAL MATERIALS CHARACTERIZATIONS AND PHYSICS DEVICES (I, II) [3,3]		
Optoelectric Physics	■ CONDENSED MATTERPHYSIS (I, II) [3,3] ■ SEMICONDUCTOR OPTICS [3] ■ SEMICONDUCTOR NANO DEVICE PHYSICS [3] ■ MODERN OPTICS [3] ■ QUANTUM OPTICS [3] ■ ELECTRON MICROSCOPY [3] ■ MANUFACTURING TECHNOLOGY OF SEMICONDUCTOR FOR NANO DEVICE [3] ■ APPLICATION OF SYNCHROTRON RADIATION ON NOVEL MATERIALS [3] ■ INDEPENDENT STUDIES IN SEMICONDUCTOR LASERS (I, II) [3,3] ■ SEMINAR IN LASER INDUCED DYNAMIC GRATINGS (I, II) [3,3] ■ SPECIAL TOPICS IN SEMICONDUCTOR SPECTROSCOPY (I, II) [3,3] ■ INDEPENDENT STUDIES IN BOIMEDICAL PHOTONICS AND MICROFLUIDICS SYSTEM (I, II) [3,3]		

	■ INDEPENDENT STUDIES IN TIME-DOMAIN TERAHERTZ SPECTROSCOPY AND SINGLE-PIXEL CAMERAS (I, II) [3,3] ■ INDEPENDENT STUDIES IN LOW-DEMENSIONAL QUANTUM TRANSPORT BEHAVIOUR (I, II) [3,3]	
Astrophysics	■ INTRODUCTION TO ASTRONOMY [3] ■ RELATIVITY [3] ■ QUANTUM FIELD THEORY [3]	■ COMPUTATIONAL PHYSICS (I, II) [3,3] ■ GRAVITATIONAL-WAVE PHYSICS [3] ■ ASTROPHYSICS [3]
	■ INDEPENDENT STUDIES IN ASTROPHYSICS (I, II) [3,3] ■ INDEPENDENT STUDIES IN GRAVITY THEORY (I, II) [3,3] ■ INDEPENDENT STUDIES IN RADIO INTERFEROMETRY AND INSTERSTELLAR MEDIUM (I, II) [3,3] ■ INDEPENDENT STUDIES IN THEORETICAL PARTICLE PHYSICS (I, II) [3,3]	

(I, II) : 1ST and 2nd Semester

[#, #] : Credit hours of 1st and 2nd Semester