Applied Physics and Chemistry Master's Program Course Map
(Graduation: At least 28 credits)

Department Elective Courses (Minimum of 20 credits)

Department Required Courses (8 Credits)

Electrophysics

**1R(1)**

Seminar

**2R(1)**

Seminar

**2R(2)**

Master’s Thesis

**2R(2)**

Master’s Thesis

Applied Chemistry

**2R(1)**

Independent Research

Recommended Year

Required (R) Major Elective(E)

Credits

**2R(3)**

**2R(3)**

Name of Course

Education

Advanced Materials

Quantum Mechanics I & II

Electrodynamics I & II

Optoelectronics I & II

Solid State Physics I & II

Atomic and Molecular Physics I & II

Semiconductor Physics I & II

Surface Physics I & II

Classical Physics

Statistical Mechanics

Computational Physics

Electromagnetic Waves

Educational Research Methods

Nanoscience

Educational Statistics

Semiconductor Physics I & II

Advanced Physical Chemistry I &II

Special Topics on Physics

Surface Physics I & II

Advanced Analytical Chemistry I &II

Design of Science Toys

Solid State Physics I & II

Technical Paper Writing m

Semiconductor Elements

Organic Spectroscopy

Science and Life Technology Teaching Materials and Methodology

Opto-electronic devices

Organic Reaction Mechanism

Science Education Paper Writing

Applied Electrochemistry

Organic Synthesis

Science – Technology – Society

Quantum Chemistry

Special Topics on Organic Metals

Cultivation of Scientific Creativity

Instrumental Analysis

Physical Organic Chemistry

Special Topics on Scientific Exhibitions

Intro to Advanced Materials

Life Technology

Solar Energy Technology

**2R(1)**

Independent Research

Advanced Organic Chemistry I & II

Advanced Non-organic Chemistry I & II

Electrophysics

Applied Chemistry

Education

Advanced Materials

Opto-electronic Elements

Applied Electronics Experiments I & II

Microcontroller Applications

Opto-electronic Values and Methodology

Application of Object-oriented Program Language on Projects

Physics of low-dimensional semiconductor elements

Design of light-driven circuits

Intelligent Control

Power Electronics

Practices of Power Electronics

Chemical Separation

Intro to Labview Program Design

Semiconductor Elements

Opto-electronic Physics

Biophysics

Particle Physics

Optical Simulation and Program Design

Non-organic Materials

 Sustainable Chemistry

Biomedical Opto-electronics

Non-organic Synthesis

 Creative Chemistry

Surface Chemistry

Chemical Kinetics

Statistical Thermal Dynamics

Atomic and Molecular Spectroscopy

Electrochemical Analytical Chemistry

Mass Spectrometry

Radiochemistry

Surface Chemistry

Chemical Thermodynamics

Quantum Chemistry

Computerized Chemistry

Instrumental Analysis

Special Topics on Analytical Chemistry

Biophotonics

 放射化學

Opto-electronic Experiments

Applications of Biochemical Spectrometry Analysis

Metabolomics

Science Curriculum Design

Recommended Year

Required (R) Major Elective(E)

Credits

**2R(3)**

Name of Course

Recommended Year

Required (R) Major Elective(E)

Credits

**2R(3)**

Name of Course

Graduate

Electrophysics

Applied Chemistry

Non-linear Systems

Advanced Power Electronics

Classical Mechanics

Special Topics on Biochemistry

Special Topics on Bio-physical Chemistry

Bio-analytical Chemistry

Energy Environment and Sustainability

Special Topics on Organic Chemistry

Atomic Optics

Recommended Year

Required (R) Major Elective(E)

Credits

**2R(3)**

Name of Course