# 理工学部 Curriculum Tree

## 物質生命理工学科 グリーンサイエンスコース GREEN SCIENCE COURSE, FACULTY OF SCIENCE AND TECHNOLOGY, DEPARTMENT OF MATERIALS AND LIFE SCIENCES

※ Red letters show Compulsory Sujects.

**DP1**
Understanding of the fundamentals of natural science disciplines and safety and ethical/moral values regarding science and technology

**DP2**
The ability to understand physical, chemical and natural/living phenomena based on the fundamentals of physics, chemistry and biology.

**DP3**
The ability to systematically understand the fundamentals of materials and life and contribute to the creation of substances ranging from atoms and molecules to polymers and biological materials as well as technology development.

**DP4**
The ability to contribute to solving science and engineering issues leading to substances and nanotechnology, harmonization of environment and life, and the creation of high-performance material by acquiring the ability to apply and develop what one has learned theoretically and technologically.

Level

400

- DP1 DP4 GRADUATION RESEARCH 1
- DP4 GRADUATION RESEARCH 2
- DP1 DP4 TOPICS OF PLANT SCIENCE
- DP2 DP3 ELECTROMAGNETISM
- DP3 CHEMISTRY LAB. 2
  - PHYSICAL CHEMISTRY LAB.
  - BIOLOGY LAB. 2
  - BIOLOGY LAB. 3
  - RESEARCH TRIAL (Autumn)
  - RESEARCH TRIAL (Spring)
- DP3 DP4 POLYMER CHEMISTRY
- DP4 SEMINAR 1
  - SEMINAR 2
  - ATOMIC AND MOLECULAR SPECTROSCOPY
  - INSTRUMENTAL ANALYSIS
  - ORGANIC AND NATURAL PRODUCT CHEMISTRY
  - ENVIRONMENTAL ANALYTICAL CHEMISTRY
  - GREEN CHEMISTRY
  - CATALYSIS CHEMISTRY
  - THEORY-AIDED MOLECULAR DESIGN
  - QUANTUM REACTION DYNAMICS
  - RESEARCH TOPICS IN PHYSICAL CHEMISTRY AND CHEMICAL PHYSICS
  - RESEARCH TOPICS IN ORGANIC AND INORGANIC CHEMISTRY
  - RESEARCH TOPICS IN LIFE SCIENCES
  - STRUCTURAL CHEMISTRY
  - RADIATION PHYSICS AND CHEMISTRY
  - INTRODUCTION TO MODELING OF NATURAL PHENOMENA
  - SEPARATION CHEMISTRY IN ANALYSIS
  - METALLIC AND ELECTRONIC MATERIALS
  - NATURAL PRODUCT AND DRUG DISCOVERY

300

- DP1 ENVIRONMENTAL SCIENCE
  - SUSTAINABLE DEVELOPMENT
- DP1 DP2 STUDY ABROAD (INTERNSHIP)
- DP2 ENGL.FOR SCI/ENGINEERING ENVIRONMENT
  - MATHEMATICS C1(STATISTICAL DATA ANALYSIS)
  - FOURIER & LAPLACE TRANSFORMS
  - ATOMIC & MOLECULAR SCIENCES
  - PHYSICAL CHEMISTRY
  - TECHNOLOGY & INNOVATION
  - APPLIED MECHANICS
  - NUMERICAL ANALYSIS
- DP2 DP3 MATERIALS AND LIFE SCIENCES LAB. B
  - MATERIALS AND LIFE SCIENCES LAB. C
- DP3 THERMODYNAMICS
  - CELL BIOLOGY
  - INTRODUCTION TO QUANTUM MECHANICS
  - GEOSCIENCE
  - FUNDAMENTAL BIOCHEMISTRY
  - CHEMISTRY LAB. 1
  - BIOLOGY LAB. 1
- DP4 ATMOSPHERIC CHEMISTRY
  - SCIENCE, TECHNOLOGY AND ENVIRONMENT

200

- DP2 INTRODUCTION OF SCIENCE AND TECHNOLOGY
  - MATHEMATICS A (LINEAR ALGEBRA)
  - MATHEMATICS B (CALCULUS)
  - MATHEMATICS EXERCISE 1
  - BASIC PHYSICS 1
  - BASIC BIOLOGY
  - BASIC CHEMISTRY
  - BASIC INFORMATICS
  - MATERIALS AND LIFE SCIENCES (PHYSICS)
  - BASIC PHYSICS 2
  - INORGANIC CHEMISTRY (ANALYTICAL CHEMISTRY)
  - BASIC DIFFERENTIAL EQUATIONS
  - ORGANIC CHEMISTRY
- DP2 DP3 EXPERIMENTS & EXERCISE OF BASIC SCIENCE
  - MATERIALS AND LIFE SCIENCES (CHEMISTRY)
  - MATERIALS AND LIFE SCIENCES (BIOLOGY)
  - MATERIALS AND LIFE SCIENCES LAB. A
  - MATHEMATICS B2 (CALCULUS OF SEVERAL VARIABLES)
- DP3 MOLECULAR BIOLOGY

100