**University of Toyama School of Pharmacy and Pharmaceutical Sciences Curriculum Chart (for students admitted in the 2018 year)**

### 1st Year

**Core Education**
- Introduction to Pharmacy
- Basic English I
- Basic English II
- Analysis
- Foreign Language
- Computer Literacy

**Physics Field**
- Physical Chemistry I
- Basic Chemistry
- Chemical Experiment

**Chemistry Field**
- Basic Organic Chemistry I
- Basic Organic Chemistry II
- Organic Chemistry I
- Physical Organic Chemistry

**Bio Field**
- Life Science
- Biological Laboratory

**Hygienic Sciences**
- Oriental & Western Medical Sciences I

**Natural Medicines**
- Medicinal and Traditional Knowledge of Wakan-yaku

**Pharmaceutical Sciences**
- Basic Pharmacy
- Pharmaceutical Chemistry

**Medical and Pharmaceutical Sciences for Research**
- Social Sciences Education Courses
- Natural Sciences Courses
- Pharmaceutical Sciences Education Courses

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### 2nd Year

**Core Education**
- Basic English II
- Technical English I
- Technical English II
- Statistics
- Practice Learning of Pharmacy
- Introduction to Intellectual Property

**Physics Field**
- Physical Chemistry II
- Applied Analytical Chemistry
- Structural Biology

**Chemistry Field**
- Organic Chemistry II
- Inorganic Chemistry
- Biochemistry II

**Bio Field**
- Functional Human Morphology
- Laboratory Animal Science

**Pharmaceutical Sciences**
- Pharmacognosy
- Introduction to Medicinal Materials

**Medical and Pharmaceutical Sciences for Research**
- Physical Chemistry for the Biosciences
- Pharmaceutical Engineering Lab.

### 3rd Year

**Core Education**
- Economics of Pharmacy
- Practice Learning of Pharmacy
- Pharmaceutical Company and Drug Development

**Physics Field**
- Analytical Chemistry Lab.
- Physical Chemistry for Life Sciences
- Structure and Fundamentals of Transporters

**Chemistry Field**
- Physical Organic Chemistry
- Spectroscopic Analyses of Organic Compounds
- Chemical Biology

**Bio Field**
- Radiology Lab.
- Pharmacology Lab.

**Pharmaceutical Sciences**
- Pharmacology Lab.
- Pharmacuetics Lab.

**Medical and Pharmaceutical Sciences for Research**
- Advanced Molecular Pharmacology
- Physical Chemistry for the Biosciences

### 4th Year

**Core Education**
- Presentation

**Specialized Courses**
- Basic Organic Chemistry I
- Basic Organic Chemistry II
- Organic Chemistry I
- Organic Chemistry II

**Compulsory Courses**
- Introductory Education Courses
- Laboratory Courses (Compulsory)

**Elective Courses**
- Practice Learning of Pharmacy
- Introduction to Intellectual Property

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### Abilities Needed for Bachelor’s Degrees (Pharmaceutical Sciences)

**Extensive Knowledge**
- Through the multiple disciplines of humanities, social sciences, natural sciences, and health sciences, students acquire the ability to understand regions and communities with different cultural and historical backgrounds, and to behave accordingly.

**Specialist Knowledge**
- Based on physics, chemistry, and biology, students build and develop a broad academic foundation relating to pharmaceutical sciences, from traditional medicine to advanced pharmaceutical sciences, and acquire the creative thinking and practical skills necessary to work in pharmaceutical research and development.

**Problem Identification/Solving Ability**
- Students acquire the ability to focus on issues in the pharmaceutical sciences field, with strong intellectual curiosity and a spirit of inquiry toward natural phenomena, the ability to logically consider results obtained from the collection and analysis of academic information and research activities such as experiments, and the ability to discuss and present ideas towards solutions.

**Ability to Contribute to Society**
- With the discipline and ethics of medical professionals, and with an understanding of patients and the standpoint of medical professionals, students acquire awareness of the expectations of the roles they will play, and acquire the ability to behave responsibly in team-based medicine and community health medicine.

**Communication Ability**
- Students acquire the ability to carry out sincere and flexible communication through active communication with others, self-growth while building fruitful human relationships, and understanding of the perspectives of people with different ideas, languages, and cultures.