

SOPHIA U



Sakura Science
Exchange Program

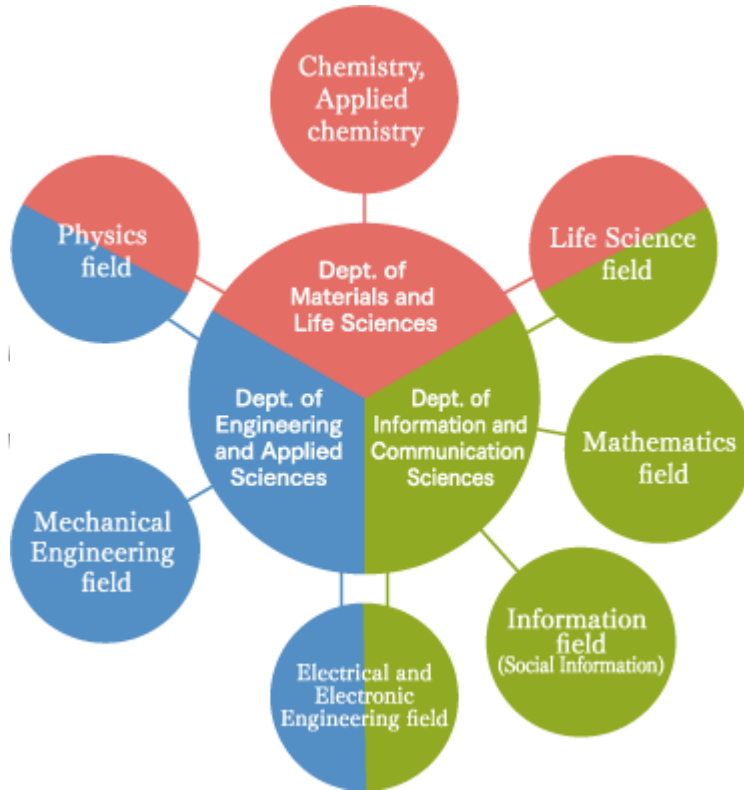
Sophia University

Faculty of Science and Technology

Briefing session for Green Science & Green Engineering courses

Department of Materials and Life Sciences

Jiro KONDO



3 Departments

7 Research fields

2 English-taught Courses

Opened in September 2012

**Designed to take on the global issue of
environmental problems**

**All classes, examinations, reports, research guidance,
and thesis writing are conducted in English.**

Green Science course

offered by

Department of Materials and Life Sciences

- ◆ **Designed to acquire fundamental knowledge of substances, and to overcome environmental issues at the atomic and molecular levels based on green material sciences.**
- ◆ **You can contribute to sustainable futures by using integrated and interdisciplinary knowledge and skills of physics, chemistry, and biology.**

Green Engineering course

offered by

Department of Engineering and Applied Sciences

- ◆ **Designed to learn electrical and mechanical engineering skills to help develop energy conservation technology, efficient power generation and distribution, and power transmission.**
- ◆ **You can contribute to sustainable futures from the electrical and mechanical engineering approach.**

Many faculty members in
Department of Information and Communication Sciences
are involved in teaching in

Green Science & Engineering courses

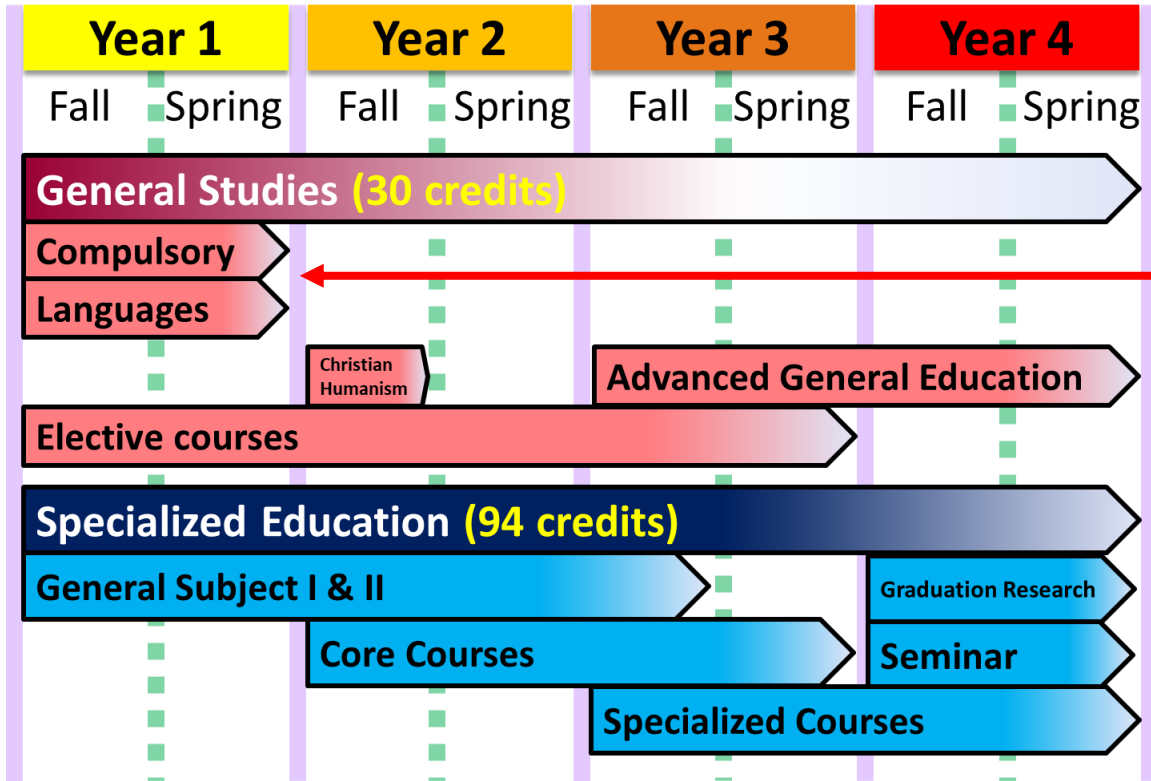
25 students for each course

Personalized education

**Close communication between
professors and students**

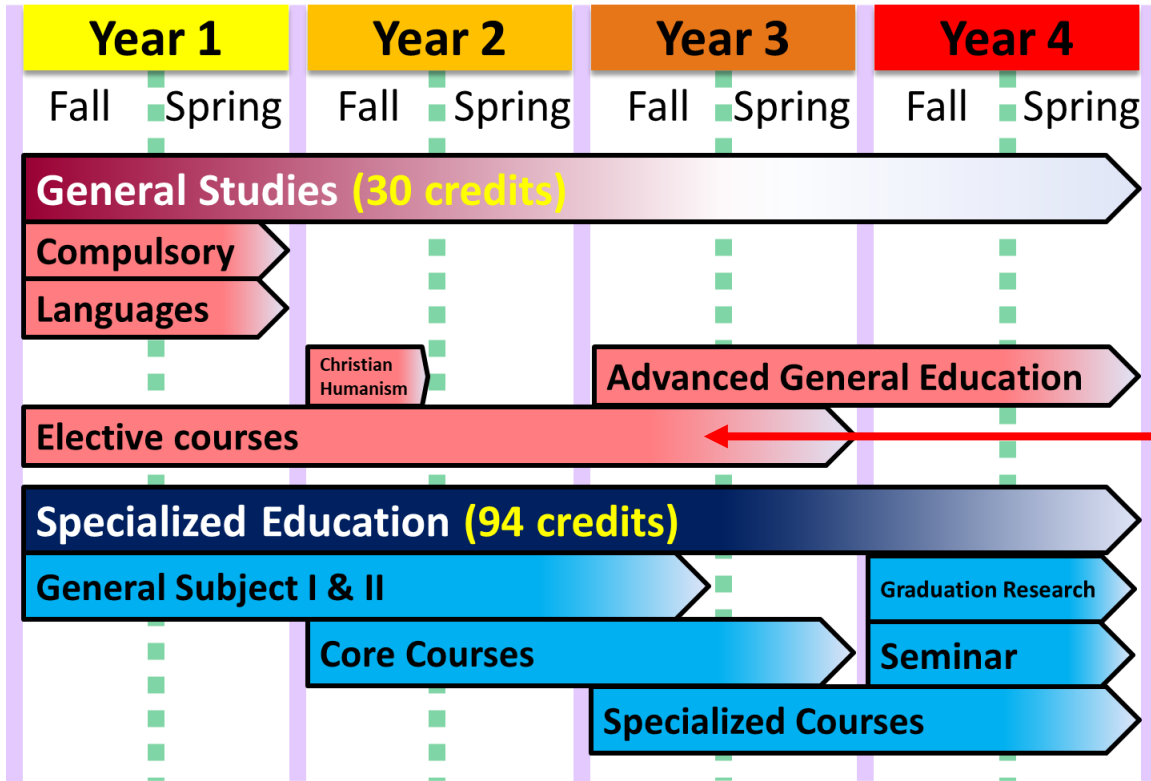
Enrollment in each department: 125 (@2021)

Curriculum model



In 1st year
Students will take courses from General Studies to broaden their perspectives.

Curriculum model



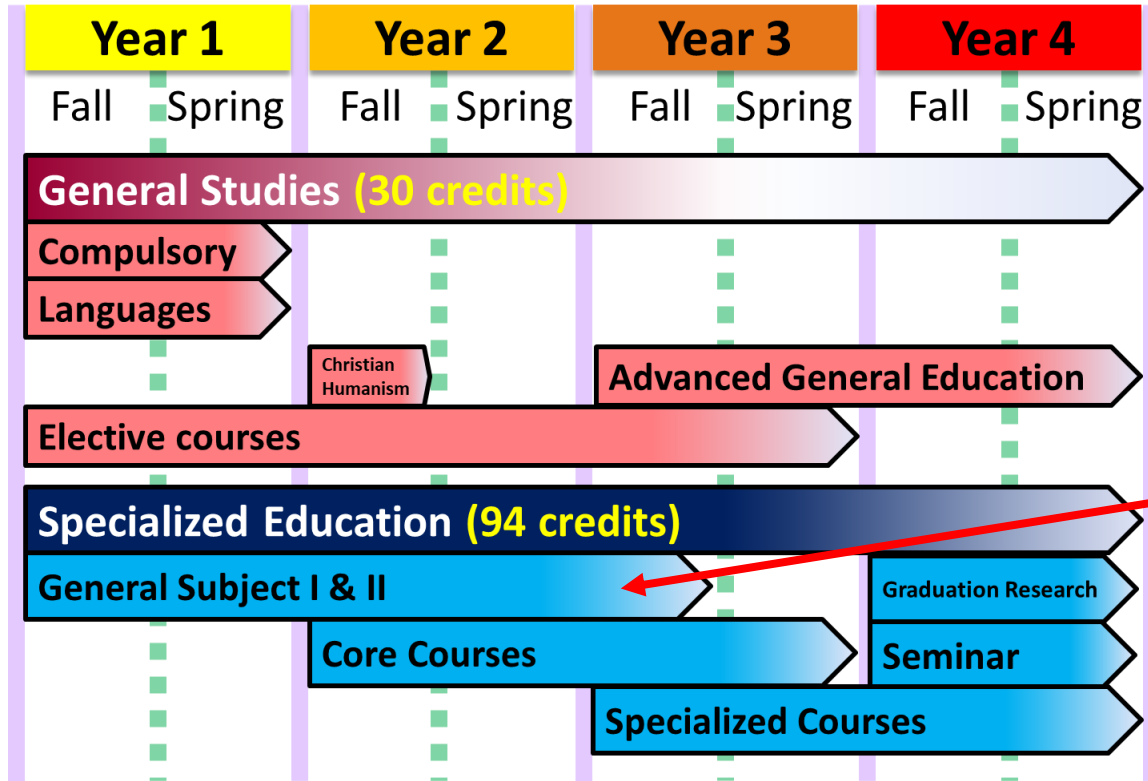
More than 200 elective courses are available.

- Japanese language
- Other languages
- Basic courses offered by FLA

Elective courses: More than 200 courses are available

- Japanese Language
- Japanese Government and Politics
- Introduction to Japanese Art
- Introduction to Japanese Culture
- International Finance
- International Marketing
- Introduction to International Relations
- Cultural and Social Anthropology
- Globalization and Society
- Religion, Culture, and Society

Curriculum model



From 1st year, 1st semester
Basic major courses called
“General Subject” begin.

- Mathematics
- Physics
- Chemistry
- Biology
- Practical courses

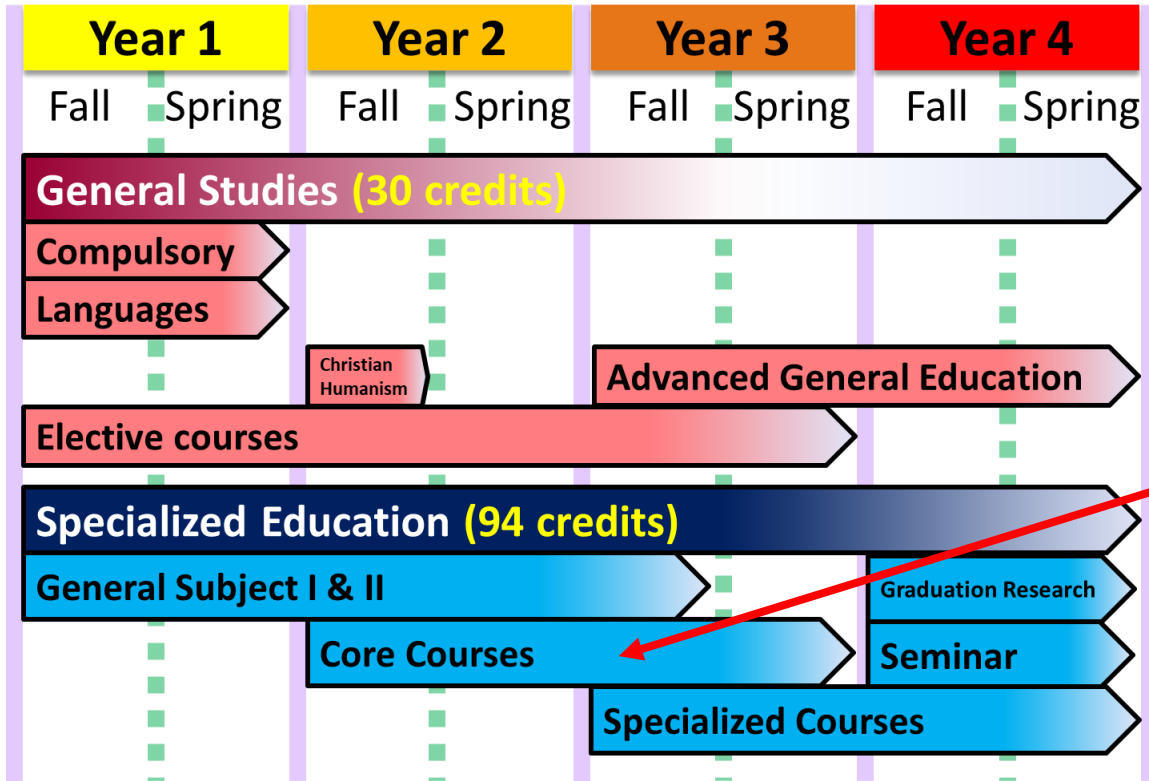
General Subject Group I

- Introduction of Sciences & Technology
- Mathematics A (Linear Algebra)
- Mathematics B (Calculus)
- Mathematics Exercise 1
- Basic Physics 1
- Basic Chemistry
- Basic Biology
- Basic Informatics
- Experiments & Exercise of Basic science
- English for Science & Engineering (Environment)

General Subject Group II

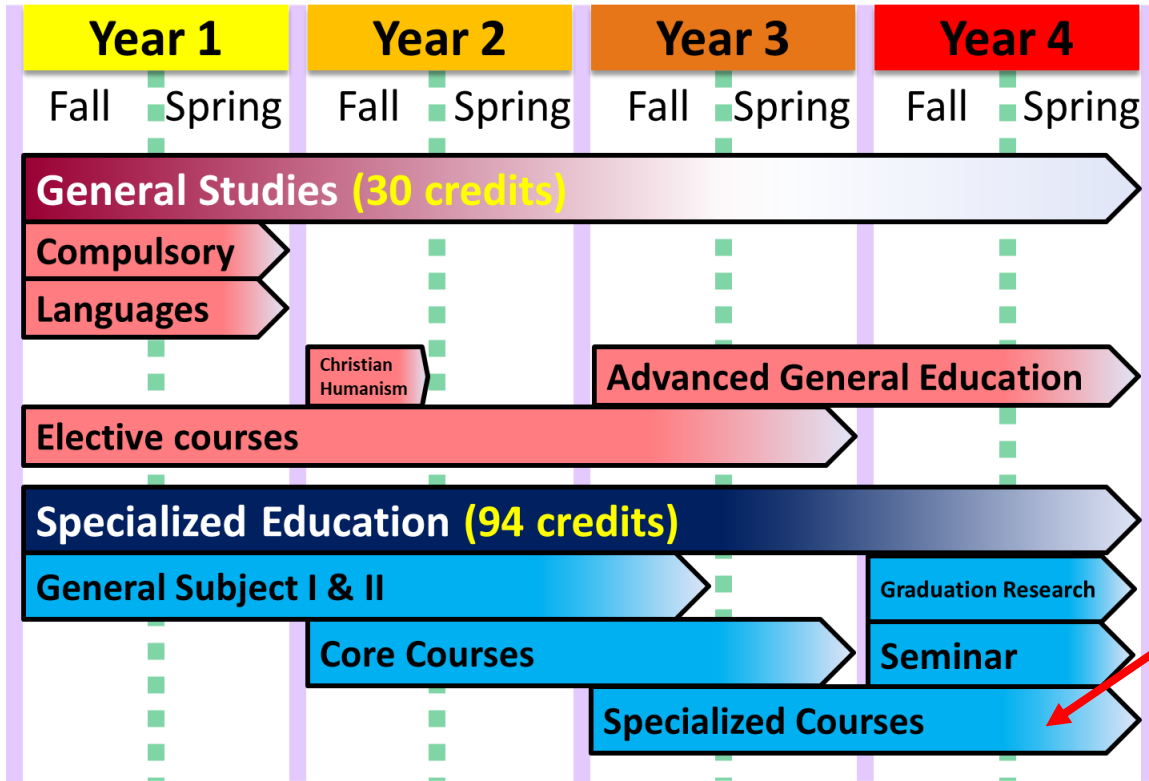
- Basic Physics 2
- Thermodynamics
- Electromagnetism
- Atomic & Molecular Science
- Intro. to Quantum Mechanics
- Inorganic Chemistry
- Organic Chemistry
- Physical Chemistry
- Atmospheric Chemistry
- Geosciences
- Fundamental Biochemistry
- Molecular Biology
- Cell Biology
- Mathematics B2
- Mathematics C1
- Fourier & Laplace Transformation
- Science, Technology & Environment
- Technology & Innovation
 - Career Development -

Curriculum model



From 2nd year
 Core courses, including specialized practical courses, begin for each Green Science and Green Engineering course.

Curriculum model



During 3rd and 4th years
Students take Specialized Courses which involve various subjects for materials & life sciences, and engineering & applied sciences.

Specialized courses for Green Science Course

- Atomic and molecular spectroscopy
- Instrumental analysis
- Organic and natural product chemistry
- Environmental analytical chemistry
- Green Chemistry
- Radiation physics and chemistry
- Catalysis engineering
- Topics of green sciences

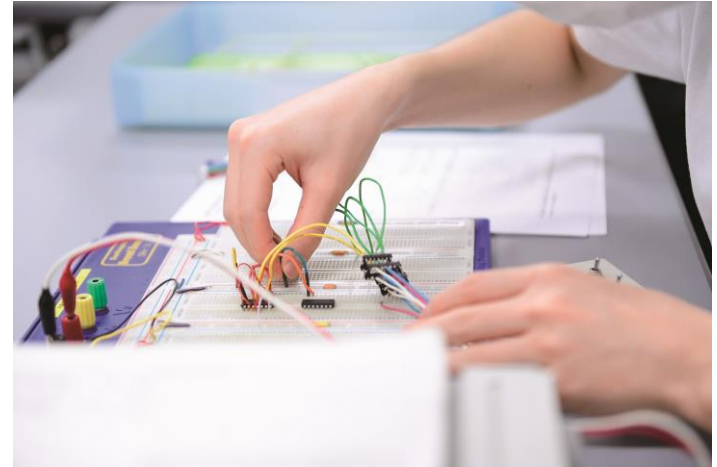
and more...



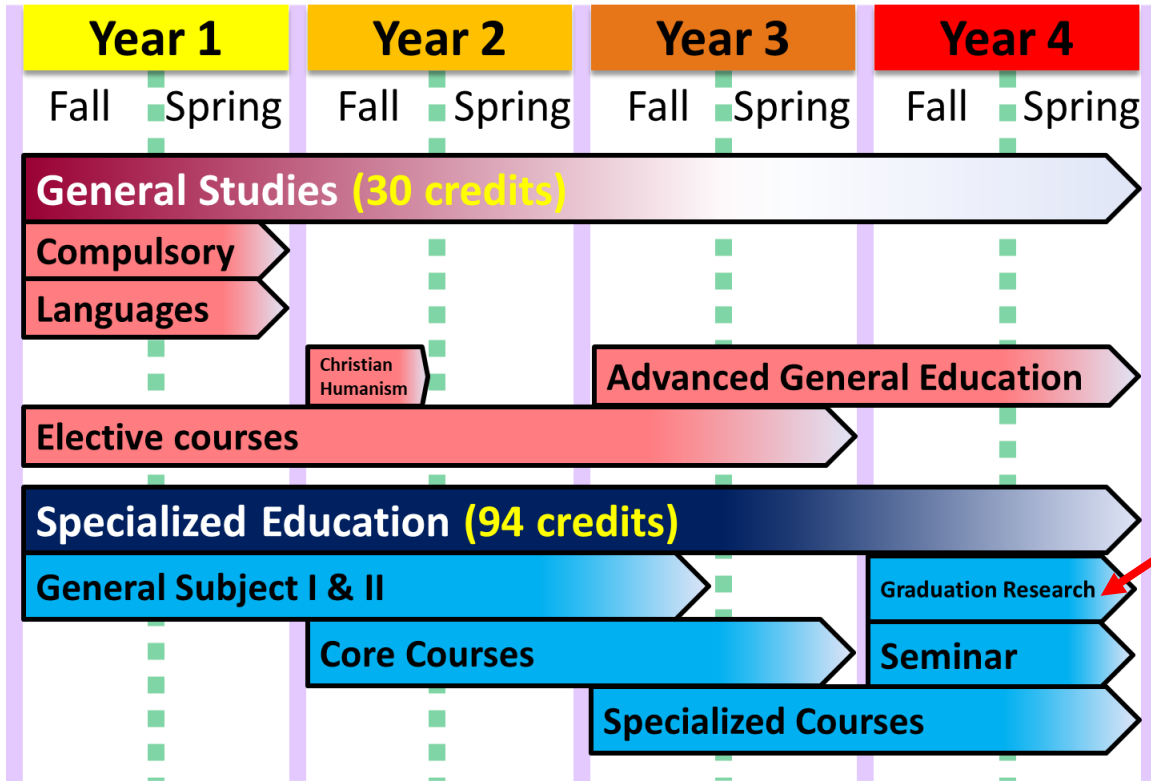
Specialized courses for Green Engineering Course

- Thermal energy conversion
- Fluid energy conversion
- Energy and materials
- Nuclear energy engineering
- Electrical drives and controls
- Electric power system engineering
- Simulation engineering
- Communication and network engineering

and more...



Curriculum model

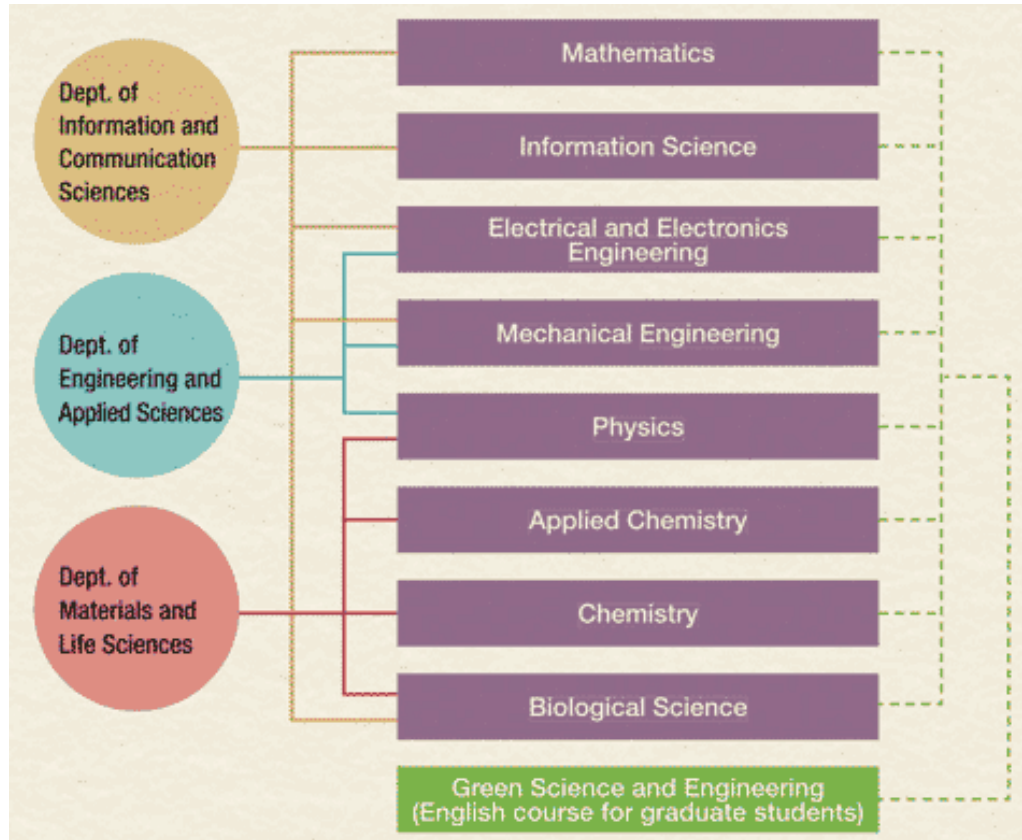


In 4th year

Students engage in Graduation Research that summarizes their accumulated knowledge and skill.

Through research, students can develop skills such as logical thinking, writing papers, and research presentation.

Graduation Research (Choose 1 from 95 laboratories)



- **Green Science Course**
Bachelor of Science in Materials and Life Sciences
- **Green Engineering Course**
Bachelor of Science in Engineering and Applied Sciences

After Graduation

| | Employment | Graduate School | Others |
|------|------------|-----------------|--------|
| 2017 | 44.6 | 49.7 | 2.7 |
| 2018 | 54.1 | 43.3 | 2.6 |
| 2019 | 55.8 | 42.1 | 2.1 |
| 2020 | 51.9 | 43.7 | 4.4 |
| 2021 | 50.3 | 44.7 | 5.0 |

Application Schedule (as of 2022)

First application period:

**From the end of November
to the middle of December**

Second application period:

**From the middle of March
to the beginning of April**

* Please check our University website for the latest information.

Country/ Region of Origin of Our Students

- Japan (34)
- Indonesia (20)
- Unites States of America (14)
- South Korea (13)
- China (11)
- India (5)
- Brazil, East Timor (3)
- Taiwan (2)
- Australia, Bangladesh, Brazil, Malaysia, Micronesia, Germany, Hong Kong, New Zealand, Pakistan, Philippines, Poland, Rwanda, Saudi Arabia, Thailand, Zimbabwe (1)



上智大学
SOPHIA UNIVERSITY

FOR OTHERS, WITH OTHERS