

Curriculum Policy of the Graduate School of Science

The curriculum of the Graduate School of Science is structured as follows, based on the Kobe University Curriculum Policy.

1. In order to impress upon graduate students *a sense of humanity, creativity and international awareness*, the Graduate School has established Advanced Science and Technology courses and other necessary courses as common courses to be taken by all students, enabling them to acquire the specialization common to the Graduate School of Science.
2. In order to foster internationally acceptable in-depth academic knowledge, and cultivate students who possess advanced expertise with the ability to conduct creative research from an interdisciplinary perspective, the Graduate School establishes the specialized subjects below and provides dissertation research guidance.
3. In the provided dissertation supervision, the emphasis for students aiming for a Doctor of Science is placed on their acquirement of advanced knowledge in their specific specialized field of research with the ability to apply this knowledge to conducting research. On the other hand, the emphasis for students aiming for a Doctor of Philosophy is placed on having them obtain a particularly broad academic perspective and a wide range of knowledge, with the ability to apply them to research in the specialized field.

• Department of Mathematics

Master's Program

- Establish scientific English courses enabling students to acquire the necessary language skills to communicate research results.
- Establish mathematics core courses enabling students to obtain deep knowledge of advanced mathematics with the ability to understand correlations among them.
- Establish mathematics development courses enabling students to acquire basic skills related to mathematics research fields and the ability to apply them to research.
- Establish mathematics special lecture courses to enable students to command an overview of a wide range of research fields in modern mathematics.
- Establish thesis research and specific research courses enabling students to acquire the fundamental ability to deeply explore mathematics and to acquire creative research abilities based on interdisciplinary perspectives.

Doctoral Program

- Establish mathematics development courses enabling students to acquire advanced skills related to mathematics research fields and the ability to apply them to research.
- Establish mathematics special lecture courses to enable students to command an overview of a wide range of research fields in modern mathematics and apply this to new ideas for research topics.
- Establish specific research courses to enable students to conduct mathematics research independently and to acquire creative research abilities based on interdisciplinary perspectives.

Furthermore, these courses are often combined where appropriate, with active learning and experience-based learning in the form of lectures, practical learning, experiments, and other classroom formats.

Learning outcomes are evaluated via multiple comprehensive methods in accordance with the learning objectives.

- In the Master's Program, the Graduate School common curriculum gradually develops students' ability to conduct expert research, by incorporating group instruction by the department in addition to individual instruction by faculty advisors, and by requiring research progress presentations in the second semester of the first year or the first semester of the second year as a necessary step for submitting degree theses.
- In the Doctoral Program, the Graduate School common curriculum gradually develops the students' ability to conduct advanced expert research, by incorporating group instruction by the department in addition to individual instruction by faculty advisors, and by requiring research progress presentations in the first and second years and a research results presentation in the third year, as necessary steps for submitting degree theses.

• Department of Physics

Master's Program

- Establish scientific English courses enabling students to acquire the necessary language skills to communicate research results.
- Establish physics core courses enabling students to understand the structure and functions of materials based on fundamental principles.
- Establish physics development courses enabling students to acquire basic skills related to physics research fields and the ability to apply them to research.

- Establish physics special lecture courses to enable students to command an overview of a wide range of research fields in modern physics.
- Establish thesis research and specific research courses enabling students to acquire the fundamental ability to deeply explore physics.

Doctoral Program

- Establish physics development courses enabling students to acquire advanced skills related to physics research fields and the ability to apply them to research.
- Establish physics special lecture courses to enable students to command an overview of a wide range of research fields in modern physics and apply this to new ideas for research topics.
- Establish specific research courses to enable students to conduct physics research independently and to acquire creative research abilities based on interdisciplinary perspectives.

Furthermore, these courses are often combined where appropriate, with active learning and experience-based learning in the form of lectures, practical learning, experiments, and other classroom formats.

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• Department of Chemistry

Master's Program

- Establish scientific English courses enabling students to acquire the necessary language skills to communicate research results.
- Establish chemistry core courses enabling students to understand the structure and functions of materials based on fundamental principles.
- Establish chemistry development courses enabling students to acquire basic skills related to chemistry research fields and the ability to apply them to research.
- Establish chemistry special lecture courses to enable students to command an overview of a wide range of research fields in modern chemistry.
- Establish thesis research and specific research courses enabling students to acquire the fundamental ability to deeply explore chemistry and to acquire creative research abilities based on interdisciplinary perspectives.

Doctoral Program

- Establish chemistry development courses enabling students to acquire advanced skills related to chemistry research fields and the ability to apply them to research.
- Establish chemistry special lecture courses to enable students to command an overview of a wide range of research fields in modern chemistry and apply this to new ideas for research topics.
- Establish specific research courses to enable students to conduct chemistry research independently and to acquire creative research abilities based on interdisciplinary perspectives.

Furthermore, these courses are often combined where appropriate, with active learning and experience-based learning in the form of lectures, practical learning, experiments, and other classroom formats.

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research progress presentations in the first and second years and a research results presentation in the third year, as necessary steps for submitting degree theses.

• Department of Biology

Master's Program

- Establish scientific English courses enabling students to acquire the necessary language skills to communicate research results.
- Establish biology core courses enabling students to understand the common mechanisms of life shared by all organisms and the origin of biodiversity based on fundamental principles.
- Establish biology development courses enabling students to acquire basic skills related to biology research fields and the ability to apply them to research.
- Establish biology special lecture courses to enable students to command an overview of a wide range of research fields in modern biology.
- Establish thesis research and specific research courses enabling students to acquire the fundamental ability to deeply explore biology and to acquire creative research abilities based on interdisciplinary perspectives.

Doctoral Program

- Establish biology development courses enabling students to acquire advanced skills related to biology research fields and the ability to apply them to research.
- Establish biology special lecture courses to enable students to command an overview of a wide range of research fields in modern biology and apply this to new ideas for research topics.
- Establish specific research courses to enable students to conduct biology research independently and to acquire creative research abilities based on interdisciplinary perspectives.

Furthermore, these courses are often combined where appropriate, with active learning and experience-based learning in the form of lectures, practical learning, experiments, and other classroom formats.

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• Department of Planetology

Master's Program

- Establish scientific English courses enabling students to acquire the necessary language skills to communicate research results.
- Establish planetology core courses enabling students to understand various processes that occur in relation to the Earth, the solar system and space based on fundamental principles.
- Establish planetology development courses enabling students to acquire basic skills related to planetology research fields and the ability to apply them to research.
- Establish planetology special lecture courses to enable students to command an overview of a wide range of research fields in planetology.
- Establish thesis research and specific research courses enabling students to acquire the fundamental ability to deeply explore planetology and to acquire creative research abilities based on interdisciplinary perspectives.

Doctoral Program

- Establish planetology development courses enabling students to acquire advanced skills related to planetology research fields and the ability to apply them to research.
- Establish planetology special lecture courses to enable students to command an overview of a wide range of research fields in planetology and apply this to new ideas for research topics.
- Establish specific research courses to enable students to conduct planetology research independently and acquire creative research abilities based on interdisciplinary perspectives.

Furthermore, these courses are often combined where appropriate, with active learning and experience-based learning in the form of lectures, practical learning, experiments, and other classroom formats.

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