

Curriculum Policy of the Graduate School of Science, Technology and Innovation

(Master's Program)

The Graduate School of Science, Technology and Innovation aims to equip science-focused individuals with research and development capabilities in cutting-edge science and technology across multiple fields, as well as the entrepreneurial skills necessary to commercialize the results of their research.

In order to achieve these goals, the Graduate School offers Special Courses (Advanced Courses in Biotechnology and Environmental Technology, Advanced Courses in Advanced Information and Communication Technology and Advanced Courses in Advanced Medical Science) to foster knowledge of a wide range of specialist fields in the natural sciences and an interdisciplinary perspective. We also provide education equipping students with the necessary skills from the basics of commercialization to the process itself, through Special Courses (Entrepreneurship Courses) and the Course in Project-Based Learning for Entrepreneurship. By combining these courses with thesis guidance, we foster rich creativity and practical problem-solving abilities.

This policy will be implemented based on the Degree Policy of this Graduate School through a systematic curriculum following the courses detailed in the following tables.

(Doctoral Program)

Based on the Kobe University curriculum policy, the Graduate School of Science, Technology and Innovation organizes the doctoral course curriculum according to the following policies.

The Graduate School offers the following courses:

- “Advanced Science and Technology Research” to improve expertise and capabilities in research and development necessary for scientific and technological breakthroughs through multidimensional research that combines knowledge in the following areas: Bioproduction, Advanced Membrane Technology, Advanced Information and Communication Technology, and Advanced Medical Science
- “Research on Science, Technology and Innovation” to cultivate the ability of providing the innovative ideas leading to economic and social value based on scientific and technological breakthroughs and designing the themes of scientific and technological breakthrough leading to innovative ideas
- “Science and Technology Entrepreneurship” to foster research and development capabilities

and practical skills of strategic entrepreneurship to make research report on the research development leading an innovation idea to a concrete innovation, or on the construction of a practical innovation strategy

Combined with dissertation supervision, this curriculum will equip global entrepreneurs in the fields of science and technology.

These courses are conducted with a combination of individual research guidance and methods of active learning, such as group work or discussion.

Graduate School of Science, Technology and Innovation master's program aims and courses

| Aims of the programme | | 1st year | | 2nd year | |
|-------------------------|---|---|--|---|--|
| | | 1st semester | 2nd semester | 1st semester | 2nd semester |
| Enhanced Humanity | High ethical standards and the ability to solve problems through cooperation with people from a range of backgrounds | ◎Commercialization of Science and Technology ◎Entrepreneurship and Law in Science and Technology ○Introduction to Advanced Biotechnology ○Introduction to Sociology of Advanced Information and Technology ○Introduction to Advanced Medicine | ◎Intellectual Property Law Practice | | |
| | The ability to take appropriate action based on a fundamental understanding of the impact of science and technology on society | ◎Commercialization of Science and Technology ◎New Venture Management ◎Business Strategy for New Ventures ◎Corporate Finance ◎Entrepreneurship and Law in Science and Technology ○Introduction to Advanced Biotechnology ○Introduction to Sociology of Advanced Information and Technology ○ICT Developments Toward Social Challenges ○Introduction to Advanced Medicine | ◎Industrial Technology Practice ◎Innovation Strategy for New Ventures ◎Entrepreneurial Finance ◎Intellectual Property Law Practice ○Advanced Energy Technology ○Bioprocess Engineering ○Advanced Course on the Regenerative Medicine | ◎Presentation Exercises | |
| Creativity | The ability to approach problems from a multi-faceted, interdisciplinary perspective | ◎Commercialization of Science and Technology ◎New Venture Management ◎Business Strategy for New Ventures ○Introduction to Advanced Biotechnology ○Introduction to Sociology of Advanced Information and Technology ○Introduction to Advanced Medicine | ◎Innovation Strategy for New Ventures ◎Industrial Technology Practice | | |
| | The ability to identify the issues involved in creating new values for society in science and technology, and to work towards solving these issues | ○Advanced Forefront Environmental Technology ○Advanced Course in Food Technology ○ICT Developments Toward Social Challenges ○Clinical Development Management ○Advanced Course on Development of Molecular Targeted Drugs and Antibody Drugs | ○Advanced Course in Agricultural Biotechnology ○Bioprocess Engineering ○Advanced Course on Network ○Advanced Course on the Regenerative Medicine ○Advanced Course on the Development of Biologics | | |
| International Awareness | The ability to engage in research with a global outlook, and to express the results of this research in a clear and logical fashion | ◎New Venture Management ◎Business Strategy for New Ventures ○Advanced Forefront Environmental Technology | ◎Innovation Strategy for New Ventures ○Advanced Energy Technology ○Bioprocess Engineering ○Advanced Course on Network | | |
| | | ○Clinical Development Management ○Advanced Course on Development of Molecular Targeted Drugs and Antibody Drugs | ○Advanced Course on the Regenerative Medicine ○Advanced Course on the Development of Biologics | ◎Presentation Exercises ◎Advanced Project Research | ◎Advanced Project Research |
| Expertise | The ability to engage in research from a specialist and interdisciplinary perspective, based on the acquisition of advanced expertise within their chosen research field as well as core knowledge of other research areas and entrepreneurship | ◎Commercialization of Science and Technology ◎New Venture Management ◎Business Strategy for New Ventures ◎Corporate Finance ◎Entrepreneurship and Law in Science and Technology ○Introduction to Advanced Biotechnology ○Advanced Forefront Environmental Technology ○Advanced Course in Food Technology ○Industrial Biotechnology | ◎Innovation Strategy for New Ventures ◎Entrepreneurial Finance ◎Intellectual Property Law Practice ○Advanced Course in Agricultural Biotechnology ○Advanced Energy Technology ○Bioprocess Engineering | | |
| | | ○Introduction to Sociology of Advanced Information and Technology ○Integrated Systems ○ICT Developments Toward Social Challenges ○Introduction to Advanced Medicine ○Clinical Development Management ○Advanced Course on Development of Molecular Targeted Drugs and Antibody Drugs | ○Advanced Course on Network ○Advanced Course on Computational Sciences ○Advanced Course on the Regenerative Medicine ○Advanced Course on the Development of Biologics | ◎Industrial Technology Practice ◎Advanced Project Research | ◎Advanced Project Research ◎Advanced Project Research |

◎Indicates compulsory subjects,
 ○Indicates optional subjects

Graduate School of Science, Technology and Innovation doctoral program aims and courses

| Aims of the programme | | 1st year | | 2nd year | | 3rd year | |
|-------------------------|--|--|---|--|--|--|--|
| | | 1st semester | 2nd semester | 1st semester | 2nd semester | 1st semester | 2nd semester |
| Enhanced Humanity | High ethical standards and the ability to solve problems through cooperation with people from a range of backgrounds. | Research on Science, Technology and Innovation 1 | | | | | |
| | The ability to take appropriate action based on a fundamental understanding of the impact of science and technology on society. | Advanced Science and Technology Research Research on Science, Technology and Innovation 1 | Advanced Science and Technology Research Science, Technology and Innovation Strategy Project Research | Research on Science, Technology and Innovation 2 Science, Technology and Innovation Strategy Project Research | Science, Technology and Innovation Strategy Project Research | | |
| Creativity | The ability to achieve research results expected to lead to a scientific and technological breakthrough based on advanced expertise within their research field, and design the concepts (innovation ideas) of new products or services with economic and social value, or the themes of the scientific and technological breakthrough leading to innovative ideas | Research on Science, Technology and Innovation 1 | Advanced Science and Technology Research Science and Technology Entrepreneurship Science, Technology and Innovation Strategy Project Research | Research on Science, Technology and Innovation 2 Science, Technology and Innovation Strategy Project Research | | | |
| | The ability to build a practical and high-quality innovation strategy, including the launch of a new venture or business, through realizing a concrete innovation from their ideas | | Science and Technology Entrepreneurship Science, Technology and Innovation Strategy Project Research | Research on Science, Technology and Innovation 2 Science, Technology and Innovation Strategy Project Research | Science, Technology and Innovation Strategy Project Research | Science, Technology and Innovation Strategy Project Research | Science, Technology and Innovation Strategy Project Research |
| International Awareness | The ability to engage in research with a global outlook, and to express the results of this research in a clear and logical fashion | Advanced Science and Technology Research | Advanced Science and Technology Research Science, Technology and Innovation Strategy Project Research Science and Technology Entrepreneurship | Science, Technology and Innovation Strategy Project Research | Science, Technology and Innovation Strategy Project Research | Science, Technology and Innovation Strategy Project Research | Science, Technology and Innovation Strategy Project Research |
| Expertise | The ability to make creative breakthroughs in scientific and technological fields through multidimensional research that combines knowledge in the following areas: Bioproduction, Advanced Membrane Technology, Advanced Information and Communication Technology, and Advanced Medical Science. | Advanced Science and Technology Research Research on Science, Technology and Innovation 1 | Advanced Science and Technology Research Science, Technology and Innovation Strategy Project Research | Science, Technology and Innovation Strategy Project Research Research on Science, Technology and Innovation 2 | Science, Technology and Innovation Strategy Project Research | Science, Technology and Innovation Strategy Project Research | Science, Technology and Innovation Strategy Project Research |

All compulsory subjects