

## Nara Institute of Science and Technology

### Curriculum Policy

In order to achieve the goals set forth in the diploma policy, the Department of Science and Technology maintains a structured educational program that focuses on the acquisition of specialized knowledge in information, biological and materials sciences, and their interdisciplinary fields of research, while also equipping students with the spirit of challenge, well-roundedness, interdisciplinary understanding, and the global perspectives necessary for human resources who will contribute to the development of the next generation of advanced science and technology, and the activities and developments in both industry and society. With a strong emphasis on the interdisciplinary developments of existing research fields, programs with a high degree of flexibility and an interdisciplinary focus to accommodate students' career and future objectives have been established in the master's course, and programs focusing on the development of internationally adept students who are independent and self-reliant have been established in the doctoral course.

#### <Master's course>

1. Introductory subjects for learning the general science and technology trends necessary for studying advanced science and technology and holistic comprehension
2. Subjects with balanced content for students from diverse academic backgrounds to provide basic knowledge of advanced science and technology and to develop comprehensive understanding
3. Subjects to provide highly specialized knowledge concerning advanced science and technology
4. PBL subjects to develop the ability to grasp issues comprehensively, to discover and solve problems in cooperation with others, and to foster a sense of challenge
5. Subjects to improve the presentation and communication skills necessary to be active professionally in society.
6. Through cooperation with industry and government, subjects to foster the ability to understand science and technology issues and their roles within industrial and societal activities
7. Subjects to improve the communication skills required of researchers and engineers, English communication skills for Japanese students and Japanese communication skills for international students
8. Subjects to enhance the ethical thinking and the perspectives of societal trends required for researchers and engineers

The learning outcomes of each of these subjects shall be evaluated based on the results of written tests, reports, exercises, experiments, practical work, etc.

9. Importance is placed on active engagement in research tasks that contribute to advanced science

and technology academically or in application to write a master's thesis, a special extended essay, or an extended essay through seminars and research guidance. Through this, the acquisition of research or technology development skills are achieved and the spirit of challenge, well-roundedness, interdisciplinary understanding, and ethics that will contribute to leading the next generation of advanced science and technology are fostered. Learning outcomes are evaluated by two or more supervising professors.

For effective implementation of the above educational policy, compulsory subjects, optional subjects, and core subjects for each program are offered with the appropriate combination with lectures, exercises, PBL, experiments, and practical subjects focused on active learning.

<Doctoral course>

1. Subjects teaching state-of-the-art expertise in information science, biological science, materials science, and their interdisciplinary fields.
2. Subjects to foster the ability to actively envision relationships with society, including broad perspectives based on interdisciplinary knowledge, comprehensive understanding, and career planning.
3. Subjects to develop the ability to actively and independently plan and execute research projects, to solve problems, and pursue the boundaries of science and technology.
4. Subjects focused on the acquisition of the presentation and communication skills necessary for successful international activity.

The learning outcomes of each of these subjects shall be evaluated based on the results of written tests, reports, exercises, experiments, practical work, etc.

5. Importance is placed on active engagement in sophisticated research tasks that contribute to advanced science and technology academically or in application to write a doctoral thesis through seminars and research guidance. Through this, the acquisition of the ability to actively and independently identify and resolve problems in a specific field are achieved and the spirit of challenge, well-roundedness, interdisciplinary understanding, and ethicality that will globally contribute to leading next generation advanced science and technology are fostered. Learning outcomes are evaluated by three or more supervising professors.

For effective implementation of the above educational policy, lectures, exercises, hands-on training, experiments, and practical subjects focusing on active learning are offered appropriately. Each program offers subjects to teach cutting-edge knowledge in the corresponding fields.