

# Graduate School of Information Science and Technology

## Educational Objectives

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In line with the Educational Objectives of the University of Osaka, the Graduate School of Information Science and Technology aims to nurture engineers, researchers and educators with cutting-edge, advanced specialized knowledge and outstanding academic expertise in information science and technology, and the ability to play a leading role in the field of specialty and develop new disciplines, based on the belief that “Creating a knowledge-based society supported by information technology is critical for making society more prosperous and fulfilling. Information science is a discipline to develop new technologies and systems that contribute to the creation of such society, and bring innovation to society.”

### Master’s degree program

#### Cutting-edge, advanced specialized knowledge and outstanding academic expertise

Acquire cutting-edge, advanced specialized knowledge and skills in information science and technology; related disciplines such as mathematics and life sciences; or a diverse range of applied areas of these disciplines through studies of specific subjects and research activities.

#### Advanced broad-based knowledge and deep critical thinking

Acquire broad-based knowledge in the field of specialty and related areas through studies of specific subjects and research activities.

#### Sophisticated international mindset

Acquire communication skills that enable one to act with an international perspective through studies of specific subjects and research activities.

#### Advanced design prowess

Develop management skills that enable one to carry out a project as a team through research activities.

Develop a strong sense of ethics with a constant awareness that the role of information science is to contribute to the happiness of mankind, through studies of specific subjects and research guidance.

### Doctoral degree program

#### Cutting-edge, advanced specialized knowledge and outstanding academic expertise

Acquire cutting-edge, advanced specialized knowledge and skills in: information science and technology; related disciplines such as mathematics and life sciences; and applied areas of these disciplines through studies of specific subjects and research guidance.

#### Advanced broad-based knowledge and deep critical thinking

Acquire broad-based knowledge in the field of specialty and related areas through studies of specific subjects and research guidance.

#### Sophisticated international mindset

Acquire communication skills that enable one to conduct international research through studies of advanced

Global Literacy education subjects and research guidance.

### **Advanced design prowess**

Develop the ability to conduct research on an individually established theme in the field of specialty and management skills that enable one to carry out a project as a team through practical-training- and seminar-based subjects and research guidance.

Develop the ability to act as a leader among engineers or researchers in carrying out a business or research project with a strong sense of ethics and international perspective, through studies of specific subjects and research guidance.

## **Degree Awarding Policy (Diploma Policy)**

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Under the Diploma Policy of the University of Osaka, the Graduate School of Information Science and Technology confers a Master's Degree in Information Science and Technology, in Science, or in Engineering, and a Doctoral Degree in Philosophy in Information Science and Technology, in Philosophy or in Philosophy in Engineering on master's and doctoral students respectively who have: earned the stipulated number of credits by completing the systematic coursework shown below; submitted a master's thesis/doctoral dissertation written under necessary research guidance; and achieved the following objectives.

### **Master's degree program**

#### **Cutting-edge, advanced specialized knowledge and outstanding academic expertise**

Acquire sufficient academic expertise in the field of specialty.

Acquire research skills in the field of specialty, or cutting-edge, advanced knowledge and skills necessary for high-caliber professional workers.

#### **Advanced broad-based knowledge and deep critical thinking**

Develop the ability to write a master's thesis clearly and plainly.

Develop a strong sense of ethics required for a professional and member of society, and acquire advanced broad-based knowledge and deep critical thinking that enables one to apply the specialized knowledge for the benefit of society.

#### **Sophisticated international mindset**

Acquire academic and communication skills to discuss disciplines in their specialty with an international perspective.

#### **Advanced design prowess**

Develop the ability to write a master's thesis that can contribute to the progress of the field of specialty.

### **Doctoral degree program**

#### **Cutting-edge, advanced specialized knowledge and outstanding academic expertise**

Acquire cutting-edge, outstanding academic expertise in the field covered by the doctoral dissertation.

Acquire research skills in the field of specialty, or cutting-edge, advanced knowledge and skills necessary for high-caliber professional workers.

#### **Advanced broad-based knowledge and deep critical thinking**

Develop the ability to write a doctoral dissertation clearly and plainly.

Develop a strong sense of ethics required for a professional and member of society, and acquire advanced broad-based knowledge and deep critical thinking that enables one to formulate R&D plans for the happiness of mankind.

#### **Sophisticated international mindset**

Acquire academic and communication skills to conduct research independently with an international perspective.

**Advanced design prowess**

Develop the ability to write a doctoral dissertation which can make a significant contribution to the advancement of an academic theory or application of such a theory in information science and technology (e.g. discovery of previously unknown phenomena or objects; establishment and development of new theories; development, invention, and application of new technologies, equipment, methods and algorithms; and presentation of new academic ideas).

## **Teaching and Learning Policy (Curriculum Policy)**

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In line with the Curriculum Policy of the University of Osaka, the Graduate School of Information Science and Technology designs its master's- and doctoral-degree curricula as follows.

### **Master's degree program**

#### **< Principles of Curriculum Design >**

The master's degree program of the Graduate School of Information Science and Technology offers basic subjects to help students acquire specialized knowledge in each department, as well as border subjects that cover important disciplines in related fields, as part of the systematic coursework designed to guide students to develop a comprehensive understanding of, and basic knowledge in, information science. The master's degree curriculum also includes interdisciplinary subjects as well as subjects designed to develop practical skills, such as: special lectures on the latest technical trends taught by lecturers invited from companies and other external organizations; internship subjects to gain work experience at domestic and foreign companies and research institutions; and project-based practical training. In addition, students may study subjects offered by other departments and graduate schools to acquire advanced broad-based knowledge and deep critical thinking. Subjects designed to develop an international mindset include overseas internship-based subjects and seminar-based subjects to deepen understanding of the world's advanced research. Students are guided to acquire specialized knowledge in information science and technology, advanced broad-based knowledge and deep critical thinking, and an international mindset through these advanced subjects, as well as high-level research guidance.

#### **< Contents and Methods of Education >**

Students are guided to develop the qualities necessary to work as a high-caliber engineer or researcher, and acquire broad-based knowledge that enables one to meet the diverse needs of society through: lecture-based basic, border, and interdisciplinary subjects; special lectures; internship-based subjects to gain hands-on experience; project-based practical training subjects and seminar-based subjects that require an especially positive learning attitude of students; and research guidance.

#### **< Academic Performance Evaluation Method >**

The academic performance of students is strictly evaluated by assessing the level of achievement of the learning goals specified in the syllabus, using appropriate methods including examinations, assignments and reports.

### **Doctoral degree program**

#### **< Principles of Curriculum Design >**

The doctoral degree program of the Graduate School of Information Science and Technology offers Academic Major education subjects to learn cutting-edge science and technology and internship-based subjects to gain work experience at domestic and foreign companies and research institutions as part of a systematic coursework to guide students to acquire cutting-edge, academic expertise by deepening advanced specialized knowledge in information science. Subjects designed to develop an international mindset include overseas internship-based subjects and seminar-based subjects to deepen understanding of the world's advanced research. Students are guided to acquire broad-based knowledge and deep critical thinking, design prowess and an international mindset through these advanced subjects, as well as high-level research guidance.

### **< Contents and Methods of Education >**

Academic Major education subjects are offered as lectures or seminars, depending on the nature of study. Internship-based subjects are designed to gain work experience and involve preparatory study and post-internship presentation. Seminar-based subjects especially require student-initiated learning. These subjects guide students to foster the ability to create new academic value, and train individuals who can use the academic value to create new social value.

### **< Academic Performance Evaluation Method >**

The academic performance of students is strictly evaluated by assessing the level of achievement of the learning goals specified in the syllabus, using appropriate methods including examinations, assignments and reports.

Both the master's and doctoral degree programs offer the Information Science Special English Course for international students. This course is also open to Japanese students to help them develop an international mindset.