

Postgraduate programs

(Doctoral Programs)

Graduate School of Systems Engineering (Doctoral Program)

Mission Statement

The mission of the Graduate School of Systems Engineering doctoral program is to develop the following abilities:

- An overall understanding of issues and the context of problems arising from complex factors
- The ability to define research objectives and goals,
- The ability to expand on partial information and bring together individual solutions into a coherent whole to strive for excellence in systems engineering
- To contribute to improving the social environment and promoting a technology-oriented nation in Japan and other countries.

Diploma Policy

A doctoral degree in engineering is granted to those who have passed the doctoral thesis review and examinations and achieved the following goals:

1. The development of new and advanced research fields by combining knowledge in multiple engineering fields and analysing problems in contemporary society
2. The ability to address problems in contemporary society with highly original research methods that can withstand expert criticism
3. To present to society the issues discovered, the methods to solve them, and the conclusions based on their advanced research skills

(Systems Engineering Course)

4. To display leadership in the collaborative research team

(Global Engineering Course)

5. To take the initiative to engage in research in cooperation with overseas researchers

Curriculum Policy

The curriculum is designed and implemented based on the following policy.

Perspective and Content of Curriculum

The curriculum shall include systems engineering advanced research, systems engineering advanced seminar, and systems engineering global investigation.

1. The curriculum of the systems engineering course shall include systems engineering advanced research and systems engineering advanced seminar.

2. The curriculum of the global engineering course shall include systems engineering advanced research and systems engineering advanced seminar.
3. Systems engineering advanced research enables students to acquire a high level of knowledge to solve complex problems in contemporary society, and the specialized and applied ability to discover and work toward solving problems independently and/or collaboratively with established and/or pioneering solutions.
4. Systems engineering advanced seminar enables students to acquire the ability to pursue research as a team leader and conduct analysis while exchanging opinions with others on cutting-edge research in Japan and overseas.
5. Systems engineering global workshops enable students to acquire the ability to conduct analysis via exchanging opinions with others on cutting-edge research in Japan and overseas and pursue research in cooperation with foreign researchers via international internships of one month or longer.

Teaching Mode and Methodologies

1. Small-group exercises that investigate examples of research and development in Japan and overseas assist students to cultivate the techniques for developing and consolidating research themes and issues, methods for structuring technical documents, and the techniques for making presentations and having discussions.
2. Seminars cultivate the ability to develop novel and useful research objectives and issues identify appropriate countermeasures, and pursue actual research and development, according to the needs of each specialized field.

Assessment Methods

1. Specialised systems engineering research shall be assessed based on clear assessment criteria of research plans, research achievements, presentations, Q&A sessions, and technical works.
2. Specialised systems engineering workshops shall be assessed according to the progress and achievements of individual and team researchers.
3. Systems engineering global workshops shall be assessed through implementation reports and the status of preparation for international internships.

Admissions Policy

The Graduate School of Systems Engineering doctoral program seeks students who have acquired the following knowledge and abilities:

1. The advanced capability, skills, and creative thinking to conduct research in a specialized field, and in multiple fields of engineering after entering the graduate school doctoral program
2. The ability to identify unsolved problems in the field of engineering and develop plans and manage tasks to solve them
3. The willingness and attitude to proactively explore new fields and create social innovation in the field of engineering
4. The ability to logically explain their own research activities to others in Japan and overseas
5. The eagerness and attitude to cooperate with diverse people in Japan and overseas to solve problems ethically in various fields of engineering.

Expectations after admissions

After admissions, students are required to have the ability to learn independently based on specialized ability in engineering, and the ability, skills, and research capability to cooperate with people in various fields. Students are expected to have the following knowledge and abilities.

1. To independently gain the latest specialized knowledge of combined fields of engineering
2. To acquire the ability to conduct research and develop research papers that can withstand an international standard of discussion
3. To develop a global perspective on the complex problems in contemporary society and work toward solving these problems with independent and pioneering solutions

(Systems Engineering Course)

4. To take on a leadership role in research teams

(Global Engineering Course)

5. To take the initiative to pursue research in cooperation with overseas researchers

Basic Policy for Admissions

Applicants' specialized knowledge in research and the status and ideas of research are comprehensively assessed, via descriptions of their previous research, research plans, application documents, and interviews.