

International Graduate Program for Global Leaders on Engineering Systems with Humanities, Social Sciences and Cultural Studies

【Master's degree program】

1. IGP (A) Outline

Our program aims to bring up future global leaders in such various fields as policy making, national administration, legal institutes, industry, education, and academic research. We accept excellent students from all over the world, and bring them up to be of capability and skills required to solve essential problems on engineering systems with harmonization among human, organizations, societies, cultures, and science and technology. In order to achieve our goals, we provide courses on knowledge of human, organizations, societies, cultures, science and technology, and Japanese style management technologies, which have obtained the world's respects and reputations.

1-1. Graduate Major(s) available to IGP (A) Students

Graduate Major in Industrial Engineering and Economics

2. Course Outline and Competencies Developed

Subjects in the program are offered by the faculties of the department of Industrial Engineering and Economics in School of Engineering, utilizing strong and abundant resources related not only to engineering systems but also humanities, social sciences, and cultural studies. In addition, subjects on skills for academic research and knowledge of Japanese language and life will be also offered so as to educate students who will work as a bridge between Japan and their own countries.

This program aims to develop the following competencies.

- Fundamental knowledge to freely utilize mathematical engineering, information, and engineering technologies.
- Knowledge and viewpoints of industrial engineering and economics in order to comprehend management activities and programs in economics.
- Ability for deeper insight in technology and organization, and for discovering, analyzing and solving essential problems.
- Conceptual ability for structuring and modeling problems.
- Ability in explaining, documenting and communicating in English or Japanese language.
- Ability to pursue researches towards new problems.

3. Learning Goals

In order to develop the competences described above, students learn the following in this program.

A) Fundamental knowledge in industrial engineering and economics.

Learn fundamental knowledge of industrial engineering and economics at graduate level in order to utilize mathematical, information, and engineering technology freely.

B) Application of industrial engineering and economics

Learn knowledge and viewpoints of industrial engineering and economics necessary to understand management

activities and economic problems.

C) Broad viewpoints and own initiative for learning

Develop insights on technology and organization, ability for discovering, analyzing, and solving essential problems, as well as conceptual ability for structuring and modeling problems.

D) Experience of engagement with society

Pseudo-experience engagement with society and learning of engineering ethics through lectures by practitioners.

E) Strengthen communication ability

Develop ability to conduct research on new problems through research projects for master thesis, and ability for explaining and communicating information in English/Japanese languages through colloquium and seminars.

4. IGP (A) Completion Requirements and Courses

【1.】 IGP (A) Completion Requirements

8 credits of International Workshop I-II (ZDC.X491-X492), III-IV (ZDC.X591-X592).

Under this program, in addition to the above-mentioned requirements, students must also fulfill the degree completion requirements of the Graduate Major in Industrial Engineering and Economics. For completion requirements of this Graduate Major, please refer to the relevant Graduate Major page in “Guide to Graduate Majors (for IGP)”.

【2.】 IGP (A) Courses

International Workshop I-II (ZDC.X491-X492), III-IV (ZDC.X591-X592).

Under this program, in addition to the above-mentioned requirements, students must also fulfill the degree completion requirements of the Graduate Major in Industrial Engineering and Economics. For core courses of this Graduate Major, please refer to the relevant Graduate Major page in “Guide to Graduate Majors (for IGP)”.

【Doctoral degree program】

1. IGP (A) Outline

Our program aims to bring up future global leaders with advanced and latest knowledge in such various fields as policy making, national administration, legal institutes, industry, education, and academic research. We accept excellent students from all over the world, and bring them up to be of capability and skills required to solve essential problems on engineering systems with harmonization among human, organizations, societies, cultures, and science and technology. In order to achieve our goals, we provide courses on knowledge of human, organizations, societies, cultures, science and technology, and Japanese style management technologies, which have obtained the world's respects and reputations.

1-1. Graduate Major(s) available to IGP (A) Students

Graduate Major in Industrial Engineering and Economics

2. Course Outline and Competencies Developed

Subjects in the program are offered by the faculties of the department of Industrial Engineering and Economics in School of Engineering, utilizing strong and abundant resources related not only to engineering systems but also humanities, social sciences, and cultural studies. In addition, subjects on skills for academic research and knowledge of Japanese language and life will be also offered so as to educate students who will work as a bridge between Japan and their own countries.

This doctorate program aims to develop the following competencies at higher levels than the master's degree program.

- Ability to find and analyze problems in management and economic activities utilizing mathematical engineering, information, and engineering technologies.
- Ability to propose new solutions for technological, organizational, and economic problems from the viewpoints of industrial engineering and economics.
- Ability in explaining, documenting and communicating in English or Japanese language.
- Ability to pursue researches towards new problems.
- Ability to publish results of researches on cutting-edge topics in industrial engineering and economics to the world.
- Leadership to propose and pursue projects.

3. Learning Goals

In order to develop the competences described above, students learn the following in this program.

A) Fundamental knowledge in industrial engineering and economics.

Develop ability to discover, analyze problems in management and economic activities utilizing mathematical, information, and engineering technology.

B) Application of industrial engineering and economics

Develop abilities to propose new solutions for problems in technological, organizational, and economic problems from the viewpoints of industrial engineering and economics.

C) Broad viewpoints and own initiative for learning

Develop leadership to propose and pursue projects.

D) Experience of engagement with society

Develop ability to publish results of researches on cutting-edge topics in industrial engineering and economics to the world.

E) Strengthen communication ability

Develop ability to conduct research on new problems through research projects for doctorate dissertation, and ability for explaining and communicating information in English/Japanese languages through seminars.

4. IGP (A) Completion Requirements and Courses

【1.】 IGP (A) Completion Requirements

12 credits of International Workshop V-X (ZDC.X691-X696).

10 credits or more from Core Courses of the Graduate Major in Industrial Engineering and Economics (refer to the “Guide to Graduate Majors (for IGP)”) or International Off-Campus Projects I (ZDC.Y497) or II (ZDC.Y597)

Under this program, in addition to the above-mentioned requirements, students must also fulfill the degree completion requirements of the Graduate Major in Industrial Engineering and Economics. For completion requirements of this Graduate Major, please refer to the relevant Graduate Major page in “Guide to Graduate Majors (for IGP)”.

【2.】 IGP (A) Courses

International Workshop V-X (ZDC.X691-X696)

International Off-Campus Projects I (ZDC.Y497) or II (ZDC.Y597)

Under this program, in addition to the above-mentioned requirements, students must also fulfill the degree completion requirements of the Graduate Major in Industrial Engineering and Economics. For core courses of this Graduate Major, please refer to the relevant Graduate Major page in “Guide to Graduate Majors (for IGP)”.