

Major requirements for Industrial & Systems Engineering

(For undergraduate students admitted in 2015 or before)

- **Credit Requirement for Graduation:** Required to complete a total of more than 130 credits
 - **(Special Note) Other curricular requirement except for major or research course set by Department of Industrial & Systems Engineering:**
 - The students who entered in or after the 2010 academic year must take the basic course of MAS109 Introduction to Linear Algebra.
 - **Major:** at least 51 credits
 - **Mandatory Major Courses:** at least 24 credits
 - **Elective Major Courses:** at least 27 credits
 - Courses recognized as elective major courses : For students who complete the ISysE-designated courses offered by other department (including alternative courses), up to 9 credits shall be recognized as the credits earned in elective majors (applicable to students admitted in 2013 or later).
 - ※ For the list of the courses designated, please refer to the department website because it may change every year.
 - Up to 3 credits of Elective major course(CoE code) opened by the College of Engineering are recognized as Elective major courses.
 - **Minor:** at least 18 credits
 - at least 18 credits in Industrial & Systems Engineering Major courses
 - ※ Up to 9 credits can be doubly recognized from any major courses of other departments.
 - **Double Major:** at least 40 credits
 - at least 40 credits from major courses, including 24 credits in mandatory major courses.
 - ※ A maximum of 9 credits can be doubly recognized from any major courses of other departments.
 - **Research Courses:** at least 4 credits
 - Graduation Research: 3 credits (mandatory)
 - IE Seminar : 1 credit (required), A foreign student doesn't need to take the seminar course.
 - Individual Study : up to 2 credits.
- ◎ Up-to 9 credits required to earn from ISysE Co-op 1(INT482, INT495), a 24-week internship program, may be replaced with IE490 Graduation Research, IE436 Industrial and Systems Engineering Case Study, IE481 Special Topics in Industrial Engineering I <Understanding and Application of Industrial Intelligence Methodology>.
- If IE490 B.S. Thesis, IE436 Case Studies for Industrial & Systems Engineering or

IE481 Special Topics in Industrial Engineering I <Understanding and Application of Industrial Intelligence Methodology> has been completed before participating in the 24-Week Internship Program <ISysE Co-op 1>, the corresponding credits can be recognized as Elective Courses.

In case of completing ISysE Co-op 2(INT492, INT495) additionally, up to 3 credits from free elective courses may be recognized towards the credits required for graduation.

Transitional Measures

- Students admitted in 2015 or before may choose to be governed by the completion requirements applicable to students admitted in 2016 and after if desired.
- Credit recognition for ISysE Co-op 1(INT482, INT495), ISysE Co-op 2(INT492, INT495), a 24-week internship program, shall apply to all students enrolled in ISysE.
- These requirements shall apply to all students enrolled.
- Requirement that recognizes the Elective Major course(CoE code) opened by the College of Engineering as a Elective Major shall apply to all students.

Major requirements for Industrial & Systems Engineering (For undergraduate students admitted in 2016 and after)

- **Credit Requirement for Graduation:** Required to complete a total of more than 136 credits
 - ※ Required to choose and complete at least one among Advanced Major, Double Major, Minor, and Individually Designed Major

- **(Special Note) Other curricular requirement except for major or research course set by Department of Industrial & Systems Engineering**

Students who entered in or after the 2010 academic year must take the basic course of MAS109 Introduction to Linear Algebra.

- **Major:** at least 45 credits
 - **Mandatory Major Courses:** at least 24 credits
 - **Elective Major Courses:** at least 21 credits
 - Courses recognized as elective major courses : For students who complete the ISysE-designated courses offered by other department (including alternative courses), up to 6 credits shall be recognized as the credits earned in elective majors (applicable to students admitted in 2016 or later).

 - ※ For the list of the courses designated, please refer to the department website because it may change every year.

 - Up to 3 credits of Elective major course(CoE code) opened by the College of Engineering are recognized as Elective major courses.

- **Advanced Major:** at least 12 credits
 - at least 12 credits from elective major courses
 - *Only elective major courses with IE code shall be recognized.

- **Individually Designed Major:** at least 12 credits
 - Students must take 12 credits or more from major courses of more than two departments other than Industrial & Systems Engineering.

- **Minor:** at least 18 credits
 - at least 18 credits in Industrial & Systems Engineering Major courses.
 - ※ No credits from the same course will be doubly counted to satisfy major and minor department requirements.

- **Double Major:** at least 40 credits
 - at least 40 credits from major courses, including 24 credits in mandatory major courses
 - ※ Up to 6 credits may doubly count to satisfy both major department requirements.

■ Research Courses: at least 4 credits

- Graduation Research: 3 credits (mandatory)
- IE Seminar : 1 credit (mandatory), A foreign student doesn't need to take the seminar course.
- Individual Study : up to 2 credits

◎ Up-to 9 credits required to earn from ISysE Co-op 1(INT482, INT495), a 24-week internship program, may be replaced with IE490 Graduation Research, IE436 Industrial and Systems Engineering Case Study, IE481 Special Topics in Industrial Engineering I <Understanding and Application of Industrial Intelligence Methodology>.

If IE490 B.S. Thesis, IE436 Case Studies for Industrial & Systems Engineering or IE481 Special Topics in Industrial Engineering I <Understanding and Application of Industrial Intelligence Methodology> has been completed before participating in the 24-Week Internship Program <ISysE Co-op 1>, the corresponding credits can be recognized as Elective Courses.

In case of completing ISysE Co-op 2(INT492, INT495) additionally, up to 3 credits from free elective courses may be recognized towards the credits required for graduation.

□ Transitional Measures

- These requirements shall apply to all students enrolled
- Credit recognition for ISysE Co-op 1(INT482, INT495), ISysE Co-op 2(INT492, INT495), a 24-week internship program, shall apply to all students enrolled in ISysE.
- Requirement that recognizes the Elective Major course(CoE code) opened by the College of Engineering as a Elective Major shall apply to all students.

Major requirements for Industrial & Systems Engineering (For Master's Program)

Thesis Master's Degree

Please check the common graduation requirements.

- **Credit Requirement for Graduation:** Required to complete a total of more than 33 credits

- **Mandatory General Courses:** 3 credits and 1AU

- **Elective Courses:** at least 21 credits
 - Required to take more than 21 credits including at least 15 credits from IE/KSE courses
 - A maximum of 9 credits may be recognized from courses numbered in the 400s or below. However, among them, any courses which are not mutually recognized at the undergraduate and graduate levels must be approved by the academic advisor and department head from Department of Industrial & Systems Engineering.
 - For students enrolled in an interdisciplinary program who have completed more than 9 credits from IE/KSE courses and a double degree program with a foreign university, the credits earned at the relevant double major department may be recognized as those earned from IE/KSE courses, while the requirement of completing at least 6 credits from IE/KSE courses is still effective.
 - For IE481 Special Topics in Industrial Engineering I and IE801 Special Topics in Industrial Engineering II, up to 6 credits for the two courses shall be recognized if the subtitles are different.

- **Research Courses:** at most 9 credits. (including 1 credits in Seminar)
 - A foreign student who has taken HS586 course doesn't need to take the seminar course
 - Individual Study : up-to 3 credits.

Transitional Measures

- These requirements will be applicable to all students enrolled from Spring 2020

Coursework Master's Degree

Please check the common graduation requirements.

■ **Credit Requirement for Graduation:** Required to complete a total of more than 36 credits

■ **Mandatory General Courses:** 3 credits and 1AU

■ **Elective Courses:** at least 27 credits

- Required to take more than 15 credits from IE/KSE courses
- A maximum of 9 credits may be recognized from courses numbered in the 400s or below. However, among them, any courses which are not mutually recognized at the undergraduate and graduate levels must be approved by the academic advisor and department head from Department of Industrial & Systems Engineering.

■ **Research Courses:** at least 6 credits. [from Seminar or Individual study(M.S.)]

- The students who have completed the internship, project report, or conducted research equivalent to KAIST Individual Study from the counterpart university of double degree program, such accomplishments can be substituted for and transferred for Individual Study at KAIST.

■ **Application :**

The Coursework Master's Degree can be applicable to the right case of double degree program which can grant KAIST degree to students from counterpart of agreed university by the power of agreement stricken.

□ **Transitional Measures**

- These requirements will be applicable to all students enrolled from Spring 2019.

Major requirements for Industrial & Systems Engineering (For Doctoral Program)

Please check the common graduation requirements.

■ **Credit Requirement for Graduation:** Required to complete a total of more than 69 credits

■ **Mandatory General Courses:** 3 credits and 1AU

■ **Elective Courses:** at least 36 credits

- Required to take more than 24 credits from IE/KSE courses
- Select at least 36 credits, including a minimum of 24 credits from IE/KSE courses (whereas in case of students enrolled in an interdisciplinary program, a minimum of 9 credits must be included, and whereas in case of students graduated from other universities rather than KAIST or from other departments rather than Industrial & Systems Engineering Department at M.S. program, a minimum of 18 credits must be included)
- A maximum of 9 credits can be recognized from courses numbered in the 400s or below. However, among them, any courses which are not mutually recognized at the undergraduate and graduate levels must be approved by the academic advisor and department head from Department of Industrial & Systems Engineering.
- For IE481 Special Topics in Industrial Engineering I and IE801 Special Topics in Industrial Engineering II, up to 9 credits for the two courses shall be recognized if the subtitles are different.

■ **Research Courses:** at least 30 credits. (including 1 credits from Seminar)

- A foreign student who has taken HS586 course doesn't need to take the seminar course
- Individual Study : up-to 3 credits.

※ The credits earned in the Master's course work may count towards requirements for the Doctoral degree (except research credits).

The credits earned from other universities rather than KAIST may be transferred to credits for KAIST doctoral course with submission of the completed form of 'Application for Credit Transfer(from other universities)' and appropriate approvals.

□ **Transitional Measures**

- These requirements will be applicable to all students enrolled from Spring 2020.

Major requirements for Industrial & Systems Engineering (For MS-PhD Integrated Program)

Please check the common graduation requirements.

■ **Credit Requirement for Graduation:** Required to complete a total of more than 69 credits

■ **Mandatory General Courses:** 3 credits and 1AU

■ **Elective Courses:** at least 36 credits

- Required to take more than 24 credits from IE/KSE courses
- A maximum of 9 credits can be recognized from courses numbered in the 400s or below. However, among them, any courses which are not mutually recognized at the undergraduate and graduate levels must be approved by the academic advisor and department head from Department of Industrial & Systems Engineering.
- For IE481 Special Topics in Industrial Engineering I and IE801 Special Topics in Industrial Engineering II, up to 9 credits for the two courses shall be recognized if the subtitles are different.

■ **Research Courses:** at least 30 credits. (including 1 credits from Seminar)

- A foreign student who has taken HS586 course doesn't need to take the seminar course
- Individual Study : up-to 3 credits.

※ The credits earned in the Master's course work may count towards requirements for the Doctoral degree (except research credits).

The credits earned from other universities rather than KAIST may be transferred to credits for KAIST doctoral course with submission of the completed form of 'Application for Credit Transfer(from other universities)' and appropriate approvals.

□ **Transitional Measures**

- These requirements will be applicable to all students enrolled from Spring 2020.