Course Requirements

❑ Undergraduate Courses

General Course			Basic Course			Major Course			Elective Course	Research	Total
Mandatory	Elective	Subtotal	Mandatory	Elective	Subtotal	Mandatory	Elective	Subtotal			
7 (9 AU)	21	28 (9 AU)	23	9	32	24	27	51	15	4	130

A. Graduation Credits : at least 130 credits in total

※ A cumulative grade point average of 2.0 or higher out of a possible 4.3 in all coursework

B. General Course : At least 28 credits and 9AU (applicable to students entering KAIST in 2014 and thereafter; for those who have entered KAIST in 2013 and before, refer to the Course Completion Requirements by Year of Admission)

○ Mandatory General Course

   – Students entering KAIST in 2014 and thereafter: 7 credits and 9AU

     English Presentation & Discussion(1), Advanced English Listening(1), Advanced English Reading(1), Advanced English Writing(1), Writing(3), Physical Education(4AU), Humanity/Leadership(2AU), Ethics and Safety II(1AU), Happy College Life(1AU), Exciting College Life(1AU)

   – Students entering KAIST between 2011 and 2013: 6 credits and 9AU

     English Communication(1), Critical Thinking in English(2), Writing(3), Physical Education(4AU), Humanity/Leadership(2AU), Ethics and Safety II(1AU), Happy College Life(1AU), Exciting College Life(1AU)

   – Students entering KAIST between 2009 and 2010: 6 credits and 9AU

     English Communication(1), Critical Thinking in English(2), Writing(3), Physical Education(4AU), Community Service(2AU), Humanity/Leadership(2AU), Ethics and Safety II(1AU)

   – Students entering KAIST between 2007 and 2008: 7 credits and 9AU

     English Communication I(1), English Communication II(1), English Reading&Writing(2), Writing(3), Physical Education(4AU), Community Service(2AU), Humanity/Leadership(2AU), Ethics and Safety II(1AU)

     * English Communication I → English Communication

       English Communication II → English Conversation

       English Reading&Writing → Critical Thinking in English

   – Students entering KAIST between 1998 and 2006: 7 credits and 9AU

     English I(2), English II(2) Writing(4AU), Community Service(2AU), Humanity/Leadership(2AU), Ethics and Safety II(1AU)

     * English I → English Communication

       English II → Critical Thinking in English

○ Elective General Course in Humanities & Social Science : at least 21 credits

   – Take (6 credits) 1 course of each of the following 2 categories among 3 categories: Humanity, Society and Literature and Arts; the rest can be chosen regardless of the category. (applicable to students entering KAIST in 2009 and thereafter; for those who have entered KAIST in 2008 and before, refer to the Course Completion Requirements by Year of Admission)

   – Students entering KAIST between 2007 and 2010 should earn at least 9 credits through lectures in English among the 21 credits required as Elective General Courses in Humanities & Social Science.

- Students having a double major take 12 credits without considering categories. (Students entering KAIST between 2007 and 2010 should take 6 credits through lectures in English.)
  ※ The requirement of taking lectures in English as Elective General Courses in Humanities & Social Science is not applied to students entering KAIST in 2011 and thereafter.

C. Completion of Basic Courses: at least 32 credits (applicable to students entering KAIST in 2012 and thereafter; for those who have entered KAIST in 2011 and before, refer to the Course Completion Requirements by Year of Admission)
  ○ Mandatory Basic Courses: 23 credits
  ① 1 course among Fundamental Physics I (3), General Physics I (3), and Advanced Physics I (3)
  ② 1 course among Fundamental Physics II (3), General Physics II (3), and Advance Physics II (3)
  ③ 1 course of General Physics Lab I (1)
  ④ 1 course of Basic Biology (3) or General Biology (3)
  ⑤ 1 course of Calculus I (3) or Honor Calculus I (3)
  ⑥ 1 course of Calculus II (3) or Honor Calculus II (3)
  ⑦ 1 course among Basic Chemistry (3), General Chemistry I (3), and Advanced Chemistry (3)
  ⑧ 1 course of General Chemistry Lab I (1) or Advanced Chemistry Lab (1)
  ⑨ 1 course of Basic Programming (3) or Advanced Programming (3)
  - Students having entered KAIST in 2007 or before : 23 credits (①~⑨)
  - Students having entered KAIST between 2008 and 2011: 26 credits((①~⑨), Freshman Design Course: Introduction to Design and Communication)(3))
  ○ Elective Basic Courses: at least 9 credits (The students who entered in or after the 2010 academic year must take the basic course of MAS109).
    ※ Students having a double major take 6 credits. (applicable to students entering KAIST in 2010 or after)

D. Major Course : at least 51 credits
  ○ Mandatory Major Courses: at least 24 credits
    - IE241 (Engineering Statistics I), IE251 (Manufacturing Process Innovation), IE261 (Information Technology for Industrial Engineering), IE321 (Production Management I), IE331 (Operations Research I), IE332 (Operations Research II), IE341 (Engineering Statistics II), IE362 (Applied Data Structures and Algorithms).
  ○ Elective Major Courses : at least 27 credits.
    - See the Undergraduate Course List.
    - IE481: up-to 9 credits in case topics of the subjects taken are different respectively.
    - Designated Elective Courses: The selected courses (up-to 9 credits) from other departments are accepted as Elective Course Credit of Industrial & Systems Engineering (applicable to students entering KAIST in Spring 2013 and thereafter; for those who have entered KAIST in 2012 and before, refer to the Course Completion Requirements by Year of Admission). The selected list is available at the department office or the department homepage. It can change each year.

E. Elective Course
F. Research Course : up-to 6 credits.
  - Graduate research : 3 credits (required)
  - IE Seminar : 1 credit (required), A foreign student doesn't need to take the seminar course.
  - Individual Study : up-to 2 credits.
  ※ Students having a double major are exempt.

G. English Proficiency Requirements upon Graduation
- ○ Before entering or during studying at KAIST, students should obtain the minimum required score or higher from one of the following: TOEFL, TOEIC, TEPS and IELTS.
- ○ Students who have hearing impairment level 3 or above should obtain the minimum required score or higher, excluding listening.

1) Students who have submitted past scores for TOEIC (before April 2006) or TEPS (before February 28, 2007)
   - Students admitted in 2008 or later

Classification	iBT TOEFL	PBT TOEFL	CBT TOEFL	TOEIC	TEPS	IELTS
General qualification score	83	560	220	775	690	6.5
Qualification score for hearing impairment level 3 or above	62	372	146	387	414	4.8

   - Students admitted in 2007 or earlier

Classification	iBT TOEFL	PBT TOEFL	CBT TOEFL	TOEIC	TEPS	IELTS
General qualification score	83	560	220	760	670	6.5
Qualification score for hearing impairment level 3 or above	62	372	146	380	402	4.8

2) Students who have submitted NEW TOEIC score taken after May 2006 or TEPS score taken after March 1, 2007

Classification	iBT TOEFL	PBT TOEFL	CBT TOEFL	TOEIC	TEPS	IELTS
General qualification score	83	560	220	720	599	6.5
Qualification score for hearing impairment level 3 or above	62	372	146	360	359	4.8

H. Graduation Requirements for Foreign Students: TOPIK (Test of Proficiency in Korean)
- ○ Undergraduate foreign students are required to obtain level 2 or higher score in TOPIK before entering or during studying at KAIST.
- ※ Applies to students entering KAIST in 2013 and thereafter

I. Requirements for Double Major and Minor
- ○ Double major : 40 credits including mandatory major courses
- ○ Minor : at least 18 credits in Industrial & Systems Engineering Major courses.

※ General and basic courses in undergraduate program are different from years of admission; therefore, students should refer to the Course Completion Requirements by Year of Admission.

❑ **Master's Program**

Mandatory General	Mandatory Major	Elective	Research (including seminar credits)	Total
3 + 1AU	0	21	9	33

1) Thesis Master's Degree

    A. Graduation Credits : At least 33 credits in total.

    B. Mandatory General Course : 3 credits and 1AU

- CC010 Special Lecture on Leadership(non-credit, this applies to students entering KAIST in 2002 and thereafter; general scholarship students, foreign students are excluded)
- CC020 Ethics and Safety I(1AU)
- Select 1 course among the following 9 :
  CC500, CC510, CC511, CC512, CC513, CC522, CC530, CC531, CC532

    C. Elective Course : at least 21 credits.

- Select at least 21 credits including a minimum of 9 credits from IE-coded major courses(whereas in case of students enrolled in an interdisciplinary program, a minimum of 6 credits from IE-coded major courses must be included)
- A maximum of 9 credits can be recognized from major courses with a subject code of 400 level or below. But, among them, any courses which are not mutually recognized for undergraduate and graduate programs must be approved by the academic advisor and department head from Department of Industrial & Systems Engineering.
- IE801: up to 6 credits in case topics of the subjects taken are different respectively.

    D. Research Credits : at least 9 credits (including 1 in seminar).

- Seminar 1 credit (required)
- A foreign student who has taken HS586 course doesn't need to take the seminar course
- Individual Study : up-to 3 credits.

2) **Coursework Master's Degree**

    A. Graduation Credits : At least 36 credits in total.

    B. Mandatory General Course : 3 credits and 1AU

- CC010 Special Lecture on Leadership(non-credit, this applies to students entering KAIST in 2002 and thereafter; general scholarship students, foreign students are excluded)
- CC020 Ethics and Safety I(1AU)
- Select 1 course among the following 9 :
  CC500, CC510, CC511, CC512, CC513, CC522, CC530, CC531, CC532

    C. Elective Course : at least 27 credits.

- Select at least 18 credits from IE courses.
- The credits earned from the foreign university which takes part in double degree program with KAIST can be considered as KAIST credits according to the agreement stricken with relevant universities.

    D. Research Credits : at least 6 credits [among Seminar or Individual study(M.S.)]

- The students who take the internship, project report, or 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.

    E. The scope of application to Coursework Master's Degree

- The Coursework Master's Degree will be launched from Spring, 2012 academic year.
- 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.

❏ Doctoral Program

Mandatory General	Mandatory Major	Elective	Research (including seminar credits)	Total
3 + 1AU	0	36	30	69

A. Graduation Credits : At least 69 credits in total.
B. Mandatory General Course : at least 3 credits and 1AU
   - Select 1 courses among the following 9 :
     CC500, CC510, CC511, CC512, CC513, CC522, CC530, CC531, CC532.
   - CC020 Ethics and Safety I(1AU)
C. Elective Course : at least 36 credits.
   - Select at least 36 credits, including a minimum of 24 credits from IE-coded major courses(whereas in case of students enrolled in an interdisciplinary program, a minimum of 9 credits from IE-coded major courses 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 from IE-coded major courses must be included)
   - A maximum of 9 credits can be recognized from major courses with a subject code of 400 level or below. But, among them, any courses which are not mutually recognized for undergraduate and graduate programs must be approved by the academic advisor and department head from Department of Industrial & Systems Engineering.
   - IE801: up-to 9 credits
D. Research Credits : at least 30 credits (including 1 credit for a graduate seminar).
   - Seminar 1 credit (required)
   - A foreign student who has taken HS586 course doesn't need to take the seminar course
   - Individual Study : up-to 3 credits.

※ The course credits earned in the Master's course work at KAIST can be used towards the Doctoral degree(except research credits). But, the course credits earned from other M.S. program rather than KAIST can be transferred towards the Doctoral degree(except research credits) upon submission of the completed Credit Transfer Application and approval of it.

※ Interim measures : The requirements of master's and doctoral courses will be applicable to all students from Fall, 2012.