Major Course Requirements for Dept. of School of Computing

(For undergraduate students admitted in 2015 or before)

Please check the common graduation requirements.

▣ **Credit Requirement for Graduation:** Required to complete a total of more than 130 credits

▣ **Elective Basic Courses:** at least 9 credits (including Introduction to Linear Algebra(MAS109))

※ Requirements for a double major: at least 3 credits (including Introduction to Linear Algebra(MAS109))

※ Elective general course requirements are specified in the elective general course requirements by year of admission

▣ **Major:** at least 43 credits

- **Mandatory Major Courses:** at least 22 credits
- Discrete Mathematics, Data Structure, Introduction to Algorithms, Computer Organization, Programming Languages, Operating Systems and Lab., Computer Science Project (Discrete Mathematics (CS204) can be substituted by Discrete Mathematics (MAS275, MA260); Computer Organization (CS311) can be substituted by Introduction to Computer Architecture (EE312)).
- **Elective Major Courses:** at least 21 credits
  - Four credits from individual study courses are counted at maximum.

▣ **Minor:** at least 21 credits

- at least 21 credits from major courses, including 15 credits in required major courses.

▣ **Double Major:** at least 21 credits

- 40 credits including mandatory major courses

▣ **Research Courses:** at least 3 credits

- Students must take three credits for Research in Computer Science (CS490).
- Credits from seminar courses are counted as Research Course credits.

※ Students having a double major are exempt.

☐ **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.
- Students who entered in 2005 or later should fulfill current degree requirements. Students who entered in 2004 or earlier should fulfill previous degree requirements except that they could fulfill the current elective course requirement and elective basic course requirement (undergraduate requirement C and E).
- Current research course requirement (undergraduate requirement F) applies to those who entered in 2001 or later. Students who entered in 2000 or earlier should fulfill previous degree requirements. (Credits from research courses are counted towards major course requirement)
- Substitute courses for
    - ㅇ Discontinued courses
        - Simulation (CS434) has not been offered from Fall 2001. Computer Simulation (IE363) is counted as elective major course from Fall 2001.
        - Introduction to Computer Science (CS200) has not been offered from Spring 2009. IT Programming and Practice (IE362) or Programming for Electrical Engineering (EE209) is counted as elective major course from Spring 2009.
        - Mobile Applications Development (CS446) → Mobile Computing and Applications (CS442) (Retaking class after 2011 Spring)

Major Course Requirements for Dept. of School of Computing

(For undergraduate students admitted in 2016 and after)

Please check the common graduation requirements.

▣ **Credit Requirement for Graduation:** Required to complete a total of more than 136 credits

※ Required to choose and complete one among Advanced Major, Double Major, Minor, and Individually Designed Major.

▣ **(Special Note)** Elective Basic Courses: at least 9 credits (including Introduction to Linear Algebra(MAS109))

※ Requirements for a double major: at least 3 credits (including Introduction to Linear Algebra(MAS109))

※ Elective general course requirements are specified in the elective general course requirements by year of admission.

▣ **Major:** at least 49 credits

- **Mandatory Major Courses:** at least 22 credits
  - Discrete Mathematics, Data Structure, Introduction to Algorithms, Computer Organization, Programming Languages, Operating Systems and Lab., Computer Science Project (Discrete Mathematics (CS204) can be substituted by Discrete Mathematics (MAS275, MA260); Computer Organization (CS311) can be substituted by Introduction to Computer Architecture (EE312)).
- **Elective Major Courses:** at least 27 credits
  - Four credits from individual study courses are counted at maximum.

▣ **Advanced Major:** at least 12 credits

※ Students must take 12 credits or more of elective major courses from School of Computing, except for 200-level courses.

▣ **Individually Designed Major:** at least 12 credits

- Students must take 12 credits or more of major courses from more than two departments other than School of Computing.

▣ **Minor:** at least 21 credits

- at least 21 credits from major courses, including 15 credits in required major courses.

※ No credits from the same course will be doubly counted to satisfy major and minor department requirements.

▣ **Double Major:** at least 21 credits

- 40 credits including mandatory major courses

※ Up-to 6 credits can be doubly counted to satisfy both major department requirements.

▣ **Research Courses:** at least 3 credits

- Students must take three credits for Research in Computer Science (CS490).
- Credits from seminar courses are counted as Research Course credits.

※ Students having a double major are exempt.

☐ **Transitional Measures**

Students admitted in 2015 or before may choose to be governed by the completion requirements listed above if desired.

Major Course Requirements for Dept. of School of Computing

(For Master's Program)

Thesis Mater's Degree Program

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

- Take 1 course from the following courses: Probability and Statistics (CC511), Introduction to Materials Science and Engineering (CC512), Engineering Economy and Cost Analysis (CC513), Introduction to Instruments (CC522), Entrepreneurship and Business Strategies (CC530), and Collaborative System Design and Engineering (CC532).
- 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)

▣ **Mandatory Major Courses:** none

▣ **Elective Courses:** at least 18 credits

- **Essential Courses (at least 9 credits):** Take one course from each of the following three areas.

  Theory: Design and Analysis of Algorithms, Theory of Formal Languages and Automata, Computational Geometry, Computational Linguistics.

  Software: Theory of Programming Languages, Software Engineering, Database System, Database Design (For Database System and Database Design, only one of the courses will be accepted to satisfy the course requirements.), Artificial Intelligence and Machine Learning, Intelligent Robotics, Natural Language Processing I, Computer Vision, Computer Graphics, Semantic Web, Models of Software Systems, Designs for Software and Systems.

  Computer Systems: Computer Architecture, Operating System, Network Architecture, Internet Systems Technology, Advanced Information Security, Wireless Mobile Internet, Distributed Systems

- **Elective Courses (at least 9 credits):** 3 credits must be from the courses offered by the School of Computing (CSXXX). (Students who entered the master program in 2015 or earlier : 6 credits must be from the courses offered by the School of Computing.)

▣ **Research Courses:** minimum 6 credits. (2 credits from seminar courses are required and can be credited towards research credits.)

▣ **Miscellaneous:** Up to 9 credits from 500-level courses taken as an undergraduate at KAIST are acknowledged.

Coursework Master's Degree Program

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

- Take 1 course from the following courses: Probability and Statistics (CC511), Introduction to Materials Science and Engineering (CC512), Engineering Economy and Cost Analysis (CC513), Introduction to Instruments (CC522), Entrepreneurship and Business Strategies (CC530), and Collaborative System Design and Engineering (CC532).
- 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)

▣ **Mandatory Major Courses:** none

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

- Essential Courses (at least 9 credits): Same as Thesis Master's program requirement.
- Elective Courses (at least 18 credits): 12 credits must be from the courses offered by the School of Computing (CSXXX) (Students who entered the master program in 2015 or earlier: 6 credits must be from the courses offered by the School of Computing.)

▣ **Research Courses:** minimum 3 credits. (Credits from individual study are required. In addition, 2 credits from seminar courses are required and can be credited towards research credits.)

▣ **Miscellaneous:** Up to 9 credits from 500-level courses taken as an undergraduate at KAIST are acknowledged.

▣ **GPA must be over 3.0.**

☐ **Transitional Measures**

- Students who entered in 2016 or later should fulfill the current degree requirements.
- Students who entered in 1998 or earlier can use credits from Graph Theory towards mandatory major course requirement in theory area.
- From the Fall semester 2001, Internet Server (TE628) offered by Cooperative Telecommunication Education Program is counted as an elective major course.
- Smart Business Application and Development(CS541) is counted as an elective course from Fall 2012.

Major Course Requirements for Dept. of School of Computing

(For Doctoral Program)

Please check the common graduation requirements.

▣ **Credit Requirement for Graduation:** Required to complete a total of more than 60 credits

▣ **Mandatory General Courses:** 3 credits and 1AU (If a student has already fulfilled this requirement for master's program, he or she is considered to have fulfilled this requirement in doctoral program.)

- Take 1 course from the following courses: Probability and Statistics (CC511), Introduction to Materials Science and Engineering (CC512), Engineering Economy and Cost Analysis (CC513), Introduction to Instruments (CC522), Entrepreneurship and Business Strategies (CC530), and Collaborative System Design and Engineering (CC532).
- CC020 Ethics and Safety I (1AU)

▣ **Mandatory Major Courses:** none

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

- Essential Courses (at least 9 credits): Same as the master's program requirements. If a student has already fulfilled this requirement for master's program, he or she is considered to have fulfilled this requirement in doctoral program.
- Elective Courses (at least 18 credits): 9 credits must be from the courses offered by the Department of Computer Science.

▣ **Research Courses:** minimum 30 credits. (4 credits from seminar courses are required and can be credited towards research credits.)

※ The course credits earned in the Master's course work can be used towards the Doctoral degree (except research credits).

☐ **Transitional Measures**

- The transitional measures for the master's program are applied to the doctoral program, except for the first item applicable only to the master program.

Major Course Requirements for Dept. of School of Computing

(For MS-PhD Integrated Program)

Please check the common graduation requirements.

▣ **Credit Requirement for Graduation:** Required to complete a total of more than 60 credits

▣ **Mandatory General Courses:** 3 credits and 1AU (If a student has already fulfilled this requirement for master's program, he or she is considered to have fulfilled this requirement in doctoral program.)

- Take 1 course from the following courses: Probability and Statistics (CC511), Introduction to Materials Science and Engineering (CC512), Engineering Economy and Cost Analysis (CC513), Introduction to Instruments (CC522), Entrepreneurship and Business Strategies (CC530), and Collaborative System Design and Engineering (CC532).
- CC020 Ethics and Safety I (1AU)

▣ **Mandatory Major Courses:** none

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

- Essential Courses (at least 9 credits): Same as the master's program requirements. If a student has already fulfilled this requirement for master's program, he or she is considered to have fulfilled this requirement in doctoral program.
- Elective Courses (at least 18 credits): 9 credits must be from the courses offered by the Department of Computer Science.

▣ **Research Courses:** minimum 30 credits. (4 credits from seminar courses are required and can be credited towards research credits.)

※ The course credits earned in the Master's course work can be used towards the Doctoral degree.

☐ **Transitional Measures**

- The transitional measures for the master's program are applied to the doctoral program, except for the first item applicable only to the master program.