Course Requirements

❒ Undergraduate Program

General Course			Basic Course			Major Course			Elective Course	Research	Total
Mandatory	Elective	Subtotal	Mandatory	Elective	Subtotal	Mandatory	Elective	Subtotal			
7 (8 AU)	21	28 (8 AU)	23	9	32	19	24	43	24	3	130

A. Graduation Credits:

At least 130 credits in total

※ The student who entered school in or before the 1996 academic year should take at least 140 credits in total.

B. General Course Requirement: At least 28 credits and 8 AUs

- ○ Mandatory General Courses: English I, English II, Writing Course (at least 7 credits), Community Service (4 AU, 64 hours), Physical Education (4 AU, 64 hours).
- ○ Elective General Courses in Humanities & Social Science: at least 21 credits (at least 7 courses).
  - Take at least 1 course in each of the following 5 divisions : Science Technology; Literature and Art; History and Philosophy; Social Science; Foreign Language and Linguistics (for the 2nd Foreign Language).

C. Basic Course Requirement: at least 32 credits

- ○ Mandatory Basic Courses: 23 credits (Take 1 course from each of the following 9 categories)
  - ① 1 course: Fundamental Physics I (3), General Physics I (3), or Advanced Physics I (3)
  - ② 1 course: Fundamental Physics II (3), General Physics II (3), or Advanced Physics II (3)
  - ③ 1 course: General Physics Lab I (1)
  - ④ 1 course: Basic Biology (3) or General Biology (3)
  - ⑤ 1 course: Calculus I (3) or Honor Calculus I (3)
  - ⑥ 1 course: Calculus II (3) or Honor Calculus II (3)
  - ⑦ 1 course: Basic Chemistry (3), General Chemistry I (3) or Advanced Chemistry (3)
  - ⑧ 1 course: General Chemistry Lab. I (1) or Advanced Chemistry Lab.II (1)
  - ⑨ 1 course: Introduction to Programming (3) or Advanced Programming (3)
- ○ Elective Basic Courses: at least 9 credits

D. Major Course Requirement: at least 43 credits

- ○ Mandatory Major Courses: at least 19 credits

  Discrete Mathematics, Data Structure, Algorithms, Computer Organization, Programming Languages, Operating Systems and Lab (Discrete Mathematics (CS204) can be substituted by Discrete Mathematics (MA260); Computer Organization (CS311) can be substituted by Introduction to Computer Architecture (EE312)).
- ○ Elective Major Courses: at least 24 credits

  No more than 4 credits from individual study are acknowledged.

E. Elective Course Requirements:

At least 2 courses among the following courses offered by the Department of Mathematics - Differential Equations and Applications (MA201), Introduction to Linear Algebra (MA111), Probability and Statistics (MA250), Modern Algebra I (MA311), Introduction to Numerical Analysis (MA365), and those by the Department of Applied Mathematics - Ordinary Differential Equations (AM331), Probability, Statistics, and Their Applications (AM250), Numerical Analysis (AM321), Mathematical Logic (AM311). If a student has taken any of AM311, AM250, and AM321 that can be substituted for MA201, MA250, and MA365, respectively, only credits from one course are acknowledged (this rule applies to those who have entered in 2002 or later).

F. Research Course Requirement: at least 3 credits
  - ○ Students must take 3 credits for Research in Computer Science (CS490).
  - ○ Credits from seminar courses are recognized as Research Course credits.

G. English Language Requirement for Graduation
  - ○ Those students who entered in 1998 or later must satisfy one of the following requirements for graduation before entering school or while in school:
    - PBT TOEFL(ITP) score: at least 560
    - CBT TOEFL score: at least 220
    - TOEIC score: at least 760
    - TEPS score: at least 670

H. Requirement for Minor and Double Major
  - ○ Double Major: at least 43 credits from major courses, including 19 credits in mandatory major courses. (Research course credits, such as in Research in Computer Science (CS490), are not recognized toward double major for those who entered in or after 2001.)
  - ○ Minor: at least 21 credits from major courses, including 12 credits in required major courses.

❒ Master's Programs

1) Thesis Master

General	Mandatory Major	Elective Major		Research	Total
3	0	Essential	Elective	12	36
		9	12		

A. Graduation credits: at least 36 credits in total.

B. Mandatory General Course: At least 3 credits.
  - ○ Take 1 course from the following courses: Introduction to Computer Application (CC510), Probability and Statistics (CC511), Introduction to Materials and Engineering (CC512), Engineering Economy and Cost Analysis (CC513), Introduction to Instruments (CC522), and Enterpreneurship and Business Strategies (CC530).
  - ○ Special Lecture on Leadership (CC010) is a no-credit course, and is compulsory for those who entered in 2002 or later. Students with corporate sponsorship and foreign students are exempt from this requirement.

C. Mandatory Major Courses: none.

D. Elective Major Courses: at least 21 credits
  - ○ Essential Courses: at least 9 credits. Take 1 course from each of the following 3 areas.
    - Theory: Design and Analysis of Algorithms, Theory of Formal Languages and Automata
    - Software: Theory of Programming Languages, Software Engineering, Database System, Database Design, Artificial Intelligence.

    ** If a student takes both Database System and Database Design, only 1 course is recognized as fullfilling the course requirement.

    ** Artificial Intelligence is included only for those who entered in 2001 or later.

    - Computer Systems: Computer Architecture, Operating System
  - ○ Elective Courses: at least 12 credits, of which 9 credits must be from the courses offered by the Division Department of Computer Science.

E. Research Courses: at most 12 credits (2 credits from seminar courses can be included.)

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

2) Coursework Master

General	Mandatory Major	Elective Major		Research	Total
3	0	Essential	Elective	3	36
		9	21		

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

B. General Courses: At least 3 credits.

- ○ Take 1 course from Introduction to Computer Application (CC510), Probability and Statistics (CC511), Introduction to Materials and Engineering (CC512), Engineering Economy and Cost Analysis (CC513), Introduction to Instruments (CC522), and Enterpreneurship and Business Strategies (CC530).
- ○ Special Lecture on Leadership (CC010) is a no-credit course, and is compulsory for those who entered in 2002 or later. Students with corporate sponsorship and foreign students are exempt from this requirement.

C. Mandatory Major Courses: none.

D. Elective Major Courses: at least 30 credits.

- ○ Essential Courses: at least 9 credits. Take 1 course from each of the following 3 areas.
  - Theory: Design and Analysis of Algorithms, Theory of Formal Languages and Automata
  - Software: Theory of Programming Languages, Software Engineering, Database System, Database Design, Artificial Intelligence.

  ** If a student takes both Database System and Database Design, only 1 course is recognized toward course requirement.

  ** Artificial Intelligence is included only for those who entered in 2001 or later.
  - Computer Systems: Computer Architecture, Operating System.
- ○ Elective Courses: at least 21 credits, of which 9 credits must be from the courses offered by the division Department of Computer Science.

E. Research Courses : at least 3 credits, including credits from individual study and 2 credits from seminar courses.

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

G. GPA must be over 3.0.

❒ Doctoral Program

General	Mandatory Major	Elective Major		Research	Total
3	0	Essential	Elective	30	72
		9	30		

A. Requirement for Graduation: at least 72 credits in total

B. General Courses: At least 3 credits

Same as the master's program requirement.(If a student has satisfied this requirement for his master's program, then one is considered to have fulfilled this requirement in one's doctoral program.)

C. Mandatory Major Courses: none.

D. Elective Major Courses: at least 39 credits

- ○ Essential Courses: at least 9 credits. Same as the master's program requirement. If a student has satisfied the requirement in one's master's program, then one is considered to have fulfilled this requirement in one's doctoral program.
- ○ Elective Courses: at least 30 credits, of which 15 credits must be from the courses offered by the Department of Computer Science.

E. Research Courses : at least 30 credits (4 credits from seminar courses can be included.)

F. Miscellaneous: Credits accumulated in one's master's program are recognized toward the doctoral degree requirement.

❒ Interim Accommodations

A. Bachelor's Program

A.1. The above research course requirement (Research in Computer Science and seminar courses) applies to those who entered in 2001 or later. For those who entered in 2000 or before, the previous degree requirement apply (credits from major courses are recognized toward research course requirement).

A.2. The above degree requirements apply to those who entered in 1999 or later. For those who entered in 1998 or before, previous degree requirements apply.

- Mandatory major course requirement: 29 credits (Introduction to Computer Science, Discrete Mathematics, Data Structure, Digital Systems and Lab, Algorithms, Computer Organization, Programming Languages, Operating Systems and Lab, Research in Computer Science).
- Elective major course requirement: at least 21 credits.

A.3. For those who entered before 1998, credits from the following courses offered by other departments are recognized toward elective major courses.

- Electronic Circuits I, Electronic Circuits II, Circuit Theory, Modern Algebra I, Modern Algebra II, Introduction to Numerical Analysis, Numerical Analysis with Computers, Management Information System, OR I, OR II, Computer Simulation.

A.4. For those who entered between 1994 and 1998, credits from Applied Mathematics II are recognized as elective courses. For those in 1993 or before, credits from Applied Mathematics II are recognized as basic science selective courses.

A.5. For those students who entered before 1998, credits from Applied Mathematics I and Applied Mathematics II can be substituted with those from Differential Equations and Applications and Applied Mathematical Analysis, respectively.

A.6. Simulation (CS434) was discontinued from the fall of 2001. Computer Simulation (IE363) offered by the Department of Industrial Engineering is considered a substitute for CS434, and its credits are recognized as elective major courses.

B. Master's Program

B.1. For those students who entered before 1998, credits from Graph Theory can be recognized as a mandatory major course requirement (in theory).

B.2. For those students who entered in the fall of 2001 and later, Internet Server (TE628) offered in Cooperative Telecommunication Education Program is recognized as elective major courses.

C. Doctoral Program: the same as in Master's Program