Course Requirements

❑ Undergraduate Program

General Course			Basic Course			Major Course			Research	Elective Course	Total
Mandatory	Elective	Subtotal	Mandatory	Elective	Subtotal	Mandatory	Elective	Subtotal			
7(8AU)	21	28(8AU)	23	9	32	0	43	43	3	24	130

A. Graduation Credits: At least 130 credits in total.

B. General Course Requirements : At least 28 credits and 8 AU.

  ○ Mandatory General Courses: 7 credits and 8 AU
   - English I, English II, Writing in Korean (7 credits)
   - Physical Education Activity (4 AU: 64 hours)
   - Volunteer Activity (4 AU: 64 hours)
   Note: AU means 1 hour activity/work a week for a semester

  ○ Elective General Courses in Humanities and Social Science: At least 21 credits
   - One course from each of 5 tracks (15 credits): Science Technology; Literature and Art; History and Philosophy; Social Science; Foreign Language and Linguistics (second foreign language)
   - The remaining courses can be chosen from any of the five tracks.

C. Basic Course Requirements : At least 32 credits.

  ○ Mandatory Basic Courses: 23 credits (choose from the following list)
   ① Choose Fundamental Physics I (3), General Physics I (3), or Honors Physics I (3)
   ② Choose Fundamental Physics II (3), General Physics II (3), or Honors Physics II (3)
   ③ Choose one of Fundamental Physics Lab I (1), General Physics Lab II (1), or Honors Physics Lab (1)
   ④ Choose either Basic Biology (3) or General Biology (3)
   ⑤ Choose either Calculus I (3) or Honors Calculus I (3)
   ⑥ Choose either Calculus II (3) or Honors Calculus II (3)
   ⑦ Choose Basic Chemistry (3), General Chemistry I (3), or Honors Chemistry (3)
   ⑧ Choose either General Chemistry Lab I (1) or Honors Chemistry Lab (1)
   ⑨ Choose either Basic Programming (3) or Honors Programming (3)

  ○ Elective Basic Courses: At least 9 credits in Mathematics, including MA201, MA202, MA111

D. Major Course Requirements : At least 43 credits.

  ○ Must include 4 courses selected from the following 6 courses:
   Linear Algebra (3), Analysis I (4), Modern Algebra I (4), Introduction to Differential Geometry (4), Topology (4), Complex Variables (3).
   Note: A student who wishes to pursue graduate study in mathematics is encouraged to take *all six* of theses courses.

  ○ A maximum of 15 credits may be taken in major courses from other departments
   (Credits applied to any other minor or double major can not be applied again).

E. Research Courses: At least 3 credits including 3 credit hours of graduation research.

F. Elective Courses : At least 24 credits.

G. English Language Requirements.

  ○ One of the following requirements should be satisfied before graduation, and preferable before entering KAIST
   - PBT TOEFL score: At least 560
   - CBT TOEFL score: At least 220
   - TOEIC score: At least 760
   - TEPS score: At least 670

※ A student who is pursuing a major in another department may complete a second major in the Mathematics Department by sucessfully completing all of the required major courses (43 credits).

(Credits applied to the first major can not be used again).

※ A minor may be completed by a student with a major in another department by earning at least 18 credits among the courses offered by the Mathematics Department.

❏ Master's Programs

1) Thesis Master's Degree

General Course	Major Course		Research	Total
	Mandatory	Elective		
3	0	24	9	36

A. Graduation Credits: at least 36 credits.

B. General Course Requirements: 3 credits.
- One course (3 credits) from CC500, CC510, CC511, CC513 .
- Leadership Class (CC010), for which credits are not granted, but which is a required course for those students who entered during the 2002 academic year or later (this requirement does not apply to general scholarship students and foreign students).

C. Major Course Requirements (Elective): at least 24 credits.
   Must include 4 courses selected from the following 6 courses:
   Algebra I, Differential Geometry I, Algebraic Topology I, Real Analysis, Complex Function Theory, Functional Analysis .

D. Research Course Requirements: at least 9 credits, including 1 credit for seminar.

2) Coursework Master's Degree

General Course	Major Course		Research	Total
	Mandatory	Elective		
3	0	30	3	36

A. Graduation Credits: at least 36 credits

B. General Course Requirement: at least 3 credits
- One course (3 credits) from CC500, CC510, CC511, CC513
- Leadership Class (CC010), for which credits are not granted, but which is a required course for those students who entered during the2002 academic year or later (this requirement does not apply to general scholarship students and foreign students).

C. Major Course Requirements (Elective): at least 30 credits.
   Must include 4 courses selected from the following 6 courses:
   Algebra I, Differential Geometry I, Algebraic Topology I, Real Analysis, Complex Function Theory, Functional Analysis.

D. Research Course Requirements: At least 3 credits (individual research), including 1 credit for seminar.

❏ Doctoral Program

General Course	Major Course		Research	Total
	Mandatory	Elective		
3	0	39	30	72

A. Graduation Credits: at least 72 credits

B. General Course Requirements: 3 credits (those students who completed the required common courses in the master's program do not need to repeat them)

C. Major Course Requirements (Elective): at least 39 credits
- Must include 4 courses selected from the following 6 courses:
   Algebra I, Differential Geometry I, Algebraic Topology I, Real Analysis, Complex Function Theory, Functional Analysis.

○ A maximum of 12 credits may be taken in major courses from other departments

D. Research Course Requirements: At least 30 credits (including 2 credits for seminar)

※ Credits earned a master's program can be included in a doctoral program.

❏ **Interim Accommodations**

　A. **Undergraduate Course**

　　○ These requirements apply to those students who entered in during the 2005 academic year or later.

　　○ Students entering during the 2001 academic year or later must fulfill the research course requirement by taking graduation, seminar, or individual research. Those entering during the 2000 academic year or earlier may substitute credits from major courses for the research course requirement.

　　○ Certain courses existing prior to the 1999 academic year may be substituted for courses in the current curriculum as described below:

　　　MA201 Applied Mathematics I → MA201 Differential Equations and Applications

　　　MA202 Applied Mathematics II → MA202 Applied Mathematical Analysis

　　　MA241 Advanced Calculus I → MA241 Analysis I

　　　MA242 Advanced Calculus II → MA242 Analysis II

　　　MA441 Real Analysis I → MA441 Lebesgue Integral Theory

　　○ MA240 Differential Equations may be substituted for MA201 Differential Equations and Applications for those students who entered school prior to the 1999 academic year.

　B. Master's and Doctoral Programs

　　○ These requirements apply to those students who entered in during the 2005 academic year or later.

　　○ MA641 Functional Analysis is regarded as a major required course for those students who entered school prior to the 1999 academic year.

※ Request for other changes and accommodations must be approved by the department.