Course Requirements

❒ Undergraduate Course

A. Graduation Credits

At least 130 credits total

B. General Course Requirements: at least 28 credits

○ Mandatory General Courses : 7 credits and 8 AU (1AU means 1 hour activity/work a week for a semester)

- English I, English II, Writing Course : 7 credits

※ The student who enters with a high TOEFL score can use this to fulfil required courses English I or II.

- Community Service (4 AU: 64 hours) and Physical Education (4 AU: 64 hours)

※ AU is not counted for GPA but is mandatory for graduation.

○ Elective Courses in Humanities & Social Science : at least 21 credits (at least 7 courses)

- Take (15 credits) 1 course from each of 5 divisions : Science Technology; Literature and Art; History and philosophy; Social Science; Foreign Language and Linguistics
- Remaining courses can be chosen regardless of the division.

※ Requirement for Foreign Language and Linguistics: students should take at least 1 course of a second foreign language other than English.

C. Basic Course Requirements: at least 32 credits

○ Mandatory Basic Courses: 23 credits (1 course from each of the following 9 categories)

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 Advanced 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 Differentials & Integrals I (3) or Advanced Differentials & Integrals I (3)
⑥ 1 course of Differentials & Integrals II (3), or Advanced Differentials & Integrals 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 II (1)
⑨ 1 course of Basic Programming (3) or Advanced Programming (3)

○ Elective Basic Courses:

1. Required: PH152 General Physics Laboratory II
2. Recommended: CH103 General Chemistry II, MA111 Introduction to Linear Algebra, MA201 Differential Equations and Applications, MA202 Applied Mathematical Analysis

D. Major Course Requirements: at least 40 credits

○ Mandatory Major Courses : at least 19 credits

○ Elective Major Courses : at least 21 credits

E. Elective Course Requirements: at least 25 credits

F. Research Course Requirements: at least 5 credits

○ Required: PH490 B.S. Thesis Research (3), PH496 Seminar (2)

○ Optional: PH495 Individual Study (maximum 4 credits)

G. English Language Requirements for Graduation

○ One of the following should be satisfied for graduation before entering or while enrolled at KAIST:

- PBT TOEFL (ITP) score : at least 560
- CBT TOEFL score : at least 220
- TOEIC score : at least 760
- TEPS score : at least 670

※ Requirements for a double major: must satisfy all of the requirements for a physics degree (students who have entered KAIST after 2001 are exempt from research course requirements including B.S. Thesis Research).

※ Requirements for a minor in physics: minimum 19 credits in physics courses including PH301 Quantum Mechanics I, and PH351 Physics Laboratory III (or PH352 Physics Laboratory IV).

NOTE: Graduation requirements can differ depending on your class. Be sure to check on the requirements pertinent to you.

❒ Master's Program

1) Thesis Master's Degree (Master's degree with thesis): Must satisfy the following course requirements, and pass the thesis defense.
   - A. Graduation Credits: minimum 36 credits
   - B. Mandatory General Course Requirements: 3 credits
     - i. One of the following courses: CC510, CC511, CC512, CC522
     - ii. CC010 Special Lectures on Leadership (non-credit course. Not required for recipients of general scholarship and foreign students).
   - C. Mandatory Major Course Requirements: 12 credits (Applied Physics Laboratory I, II, Quantum Mechanics I, Advanced Electrodynamics I)
   - D. Elective Course Requirements: minimum 9 credits (minimum 6 credits from physics)
   - E. Research Credits: up to 12 credits (2 semesters of PH990 required)

2) Coursework Master's Degree (Master's degree without thesis): Thesis defense is not required, but students must satisfy all of the following requirements.
   - o Fulfill the course requirements (below)
   - o Be admitted to the Ph. D. program
   - o Be recommended by the thesis advisor
   - A. Required number of credits for graduation: minimum 36 credits
   - B. Mandatory General course requirement: 3 credits
     - i. One of the following courses: CC510, CC511, CC512, CC522
     - ii. CC010 Special Lectures on Leadership (no course credit. Not required for recipients of general scholarship and foreign students).
   - C. Mandatory Major Course Requirements: 21 credits (Applied Physics Laboratory I, II, Quantum Mechanics I, II, Advanced Mechanics, Advanced Electrodynamics I, Statistical Mechanics)
   - D. Elective Course Requirements: minimum 9 credits (minimum 6 credits from physics)
   - E. Research Credits: minimum 3 credits (2 semesters of PH990 required)

* Master's degree without thesis is available to students who entered KAIST after the year 2000.

❒ Doctoral Program

- A. Required number of credits for graduation: minimum 72 credits.
- B. General Course Requirements: the same as those for the Master's degree (not required if taken during the Master's degree program).
- C. Mandatory Major Course Requirements: 24 credits (All of the courses for the mandatory physics course requirements for the Master's degree, plus Quantum Mechanics II, Advanced Mechanics, Advanced Electrodynamics II, and Statistical Mechanics).
- D. Elective Course Requirements: minimum 15 credits (minimum 9 credits from physics).
- E. Research Credits: minimum 30 credits
- ※ The course credits earned in the Master's course work can be used towards the Doctoral degree (except research credits).

* Graduate students are strongly recommended to take CC500.