

**Major Course Completion Requirements of
Dept. of Aerospace Engineering
(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 at least two courses among MAS109, MAS201 and MAS202)
 - at least 6 credits for students entering in 2011 and before
 - ※ Students with a double major take more than 6 credits including one course among MAS109, MAS201, MAS202.
- **Major:** at least 49 credits
 - **Mandatory Major Courses:** at least 19 credits

Admission Year	Mandatory Major Courses	Admission Year	Mandatory Major Courses
'14	MAE210,211 Thermodynamics (AE210 Aerospace Thermodynamics)	'15 -	AE210 Aerospace Thermodynamics (MAE210,MAE211 Thermodynamics)
	MAE220, MAE221 Fluid Mechanics (AE220 Aerodynamics I)		AE220 Aerodynamics I (MAE220,MAE221 Fluid Mechanics)
	MAE230, MAE231 Solid Mechanics (AE230 Mechanics of Aerospace Materials)		AE300 Flight Mechanics Project (MAE365 Flight Mechanics)
	MAE250, MAE251 Dynamics (AE250 Aerospace Dynamics)		AE208 Aerospace Engineering Laboratory I (AE308 Aerospace Engineering Laboratory I) (MAE308 Aerospace Engineering Laboratory I)
	MAE308 Aerospace Engineering Laboratory I (AE308 Aerospace Structures I)		AE307 Aerospace Engineering Laboratory II (AE309 Aerospace Engineering Laboratory II) (MAE309 Aerospace Engineering Laboratory II)
	MAE309 Aerospace Engineering Laboratory II (AE309 Aerospace Engineering Laboratory II)		AE330 Aerospace Structures I (MAE335 Aerospace Structure)
	MAE405 Aerospace System Design I (AE400 Aerospace System Design I)		AE400 Aerospace System Design I (MAE405 Aerospace System Design I)

(AE210 Aerospace Thermodynamics and ME211 Thermodynamics is replaceable)

- **Elective Major Courses:** at least 30 credits
(AE230 Mechanics of Aerospace Materials and ME231/MAE231 Solid Mechanics, AE311 Aerospace Heat Transfer and ME311/MAE311 Heat Transfer, AE370 Numerical Methods and ME301/MAE301 Numerical Analysis AE250 Aerospace Dynamics and MAE251 Aerospace Dynamics replaceable each other)
- CoE491 courses opened by College of Engineering may be used as Electives Major courses up to 3 credits
- **Minor:** at least 21 credits
 - at least 21 credits in Major courses including 4 Mandatory Major courses
- **Double Major:** at least 40 credits
 - at least 40 credits including 19 credits in Mandatory Major courses

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

- It is required to take B.S. thesis study or Aerospace System Design II.
- Thesis Study (including substitutive courses) is approved toward graduation requirements for up to 3 credits.
- Individual study is approved as research courses up to 4 credits
- ※ Students having a double major are not required to take Research Course.

- Up to 9 credits earned by completing the 24-week Internship program AE Co-op1(INT482, INT495) may be used as Graduation Research(3), Electives Major courses(6) and Elective courses(12) towards the graduation requirements. Up to 3 credits earned by completing the AE Co-op2(INT492, INT495) may be used as Elective courses(3) towards the graduation requirements.

□ **Transitional measures**

- In case in which students entering KAIST in 2014 and before are unable to satisfy the requirements of Mandatory Major courses due to a course revision or substitution, the students should earn more Elective credits by the same amount that is deficient in Mandatory Major course.
- AE308 can be substituted by AE208. (3 credits will be awarded if a student retake AE208 as substitution of AE308)
- AE309 can be substituted by AE307. (3 credits will be awarded if a student retake AE307 as substitution of AE309)
- Substitutive courses for the changed courses are determined by the department, and they are to be announced on the website. (ae.kaist.ac.kr)
- These course requirements apply to students admitted in 2015 or before.
- The AE Co-op1 internship program requirements apply to all enrolled students who have participated in AE Co-op activities since the Spring semester of 2023. However, students who have completed AE Co-op1 (INT482, INT495) by the Winter semester of 2022 will receive substitution credits for Graduation Research (3), Major Elective (3), and Free Elective (3).
- All Students are applied to that CoE491 courses opened by College of Engineering may be used as Electives Major courses up to 3 credits.
- The approval of research credits toward graduation requirements applies to all students.

Course Requirements

(Undergraduate Students entering in 2016 and thereafter)

Please check the common graduation requirements.

- **Graduation Credits:** at least 136 credits in total
 - ※ Except for major courses, over one out of advanced major, minor major, double major and Individually designed major should be taken
- **Elective Basic Courses:** at least 9 credits
 - ※ Students with a double major are required to take at least 6 credits
 - **Elective Basic Course requirement by the AE Department:** at least 9 credits including a minimum of two courses chosen among MAS109, MAS201, and MAS202
 - ※ Students with a double major are required to take at least 6 credits including a minimum of one course chosen among MAS109, MAS201, and MAS202.
- **Major Courses:** at least 42 credits
 - **Mandatory Major Courses: 21 credits**
(AE210 Aerospace Thermodynamics and ME211 Thermodynamics is replaceable)
 - **Elective Major Course: 21 credits**
(AE230 Mechanics of Aerospace Materials and ME231 Solid Mechanics, AE311 Aerospace Heat Transfer and ME311 Heat Transfer, AE370 Numerical Methods and ME301 Numerical Analysis are replaceable each other)
 - CoE491 courses opened by College of Engineering may be used as Electives Major courses up to 3 credits
- **Advanced major:** at least 18 credits

Subject No.	Subject Name
AE321	Compressible Aerodynamics
AE331	Aerospace Structures II
AE401	Aerospace System Design II
AE405	Satellite Systems
AE409	Applied Mathematics for Aerospace Engineering
AE410	Combustion Engineering
AE420	Viscous Aerodynamics
AE435	Vibration & Basic Aeroelasticity
AE450	Flight Dynamics and Control
AE455	Global Positioning System
AE480	Aerospace Applied Electronics
AE492	Special Lectures in Aerospace Engineering
AE493	Special Lectures in Aerospace Engineering II

- ※ Same subject can not be double-counted (Only one (advanced major or major courses) is acceptable)
- ※ Along with the courses listed in the table above, 500-level courses which are classified as joint undergraduate/graduate courses meet the requirement for the advanced major program

■ **Individually designed major:** at least 12 credits

- at least 12 credits of major courses in two or more other departments except the belonging department

■ **Minor:** at least 18 credits

- at least 18 credits including 9 credits in Mandatory Major courses
- ※ AE major courses can not overlap with major courses from other department.

■ **Double Major:** at least 42 credits

- 42 credits at least including 21 credits in Mandatory Major courses
- ※ Up to 6 credits can be duplicated another undergraduate major courses

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

- It is required to take B.S. thesis study or Aerospace System Design II.
- Thesis Study (including substitutive courses) is approved toward graduation requirements for up to 3 credits.
- Individual study is approved as research courses up to 4 credits
- ※ Students having a double major are not required to take Research Course.

- Up to 21 credits earned by completing the 24-week Internship program AE Co-op1(INT482, INT495) may be used as Graduation Research(3), Electives Major courses(6) and Elective courses(12) towards the graduation requirements. Up to 3 credits earned by completing the AE Co-op2(INT492, INT495) may be used as Elective courses(3) towards the graduation requirements.

□ **Interim Measures**

- Students admitted in 2015 or before may choose to be governed by the course requirements applicable to students admitted in 2016 and after if desired.
- These course requirements apply to students admitted in 2016 or after. However, elective basic course requirements will be applied to students in 2022 or after.
- The AE Co-op1 internship program requirements apply to all enrolled students who have participated in AE Co-op activities since the Spring semester of 2023. However, students who have completed AE Co-op1 (INT482, INT495) by the Winter semester of 2022 will receive substitution credits for Graduation Research (3), Major Elective (3), and Free Elective (3).

- All Students are applied to that CoE491 courses opened by College of Engineering may be used as Electives Major courses up to 3 credits.
- The approval of research credits toward graduation requirements applies to all students.

Course Requirements

(Undergraduate Students entering in 2023 and thereafter)

Please check the common graduation requirements.

- **Graduation Credits:** at least 138 credits in total
 - ※ Except for major courses, over one out of advanced major, minor major, double major and Individually designed major should be taken
- **Elective Basic Courses:** at least 9 credits
 - ※ Students with a double major are required to take at least 6 credits
 - **Elective Basic Course requirement by the AE Department:** at least 9 credits including a minimum of two courses chosen among MAS109, MAS201, and MAS202
 - ※ Students with a double major are required to take at least 6 credits including a minimum of one course chosen among MAS109, MAS201, and MAS202.
- **Major Courses:** at least 42 credits
 - **Mandatory Major Courses: 21 credits**
(AE210 Aerospace Thermodynamics and ME211 Thermodynamics is replaceable)
 - **Elective Major Course: 21 credits**
(AE230 Mechanics of Aerospace Materials and ME231 Solid Mechanics, AE311 Aerospace Heat Transfer and ME311 Heat Transfer, AE370 Numerical Methods and ME301 Numerical Analysis are replaceable each other)
 - CoE491 courses opened by College of Engineering may be used as Electives Major courses up to 3 credits
- **Advanced major:** at least 18 credits

Subject No.	Subject Name
AE321	Compressible Aerodynamics
AE331	Aerospace Structures II
AE401	Aerospace System Design II
AE405	Satellite Systems
AE409	Applied Mathematics for Aerospace Engineering
AE410	Combustion Engineering
AE420	Viscous Aerodynamics
AE435	Vibration & Basic Aeroelasticity
AE450	Flight Dynamics and Control
AE455	Global Positioning System
AE480	Aerospace Applied Electronics
AE492	Special Lectures in Aerospace Engineering
AE493	Special Lectures in Aerospace Engineering II

- ※ Same subject can not be double-counted (Only one (advanced major or major courses) is acceptable)
- ※ Along with the courses listed in the table above, 500-level courses which are classified as joint undergraduate/graduate courses meet the requirement for the advanced major program

■ **Individually designed major:** at least 12 credits

- at least 12 credits of major courses in two or more other departments except the belonging department

■ **Minor:** at least 18 credits

- at least 18 credits including 9 credits in Mandatory Major courses
- ※ AE major courses can not overlap with major courses from other department.

■ **Double Major:** at least 42 credits

- 42 credits at least including 21 credits in Mandatory Major courses
- ※ Up to 6 credits can be duplicated another undergraduate major courses

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

- It is required to take B.S. thesis study (3 credits) or Aerospace System Design II.
- Thesis Study (including substitutive courses) is approved toward graduation requirements for up to 3 credits.
- Individual study is approved as research courses up to 4 credits (For students admitted in the Fall semester of 2024 or later, a maximum of 8 credits can be approved toward graduation requirements. Of these, up to 4 credits can be approved as research courses, and the remaining 4 credits can be approved as elective courses.)
- ※ Students having a double major are not required to take Research Course.

■ Up to 9 credits earned by completing the 24-week Internship program AE Co-op1(INT482, INT495) may be used as Graduation Research(3), Electives Major courses(6) and Elective courses(12) towards the graduation requirements. Up to 3 credits earned by completing the AE Co-op2(INT492, INT495) may be used as Elective courses(3) towards the graduation requirements.

□ **Interim Measures**

- Students admitted in 2015 or before may choose to be governed by the course requirements applicable to students admitted in 2016 and after if desired.
- These course requirements apply to students admitted in 2023 or after.
- The approval of research courses credits toward graduation requirements

applies to all students.

- The approval of up to 8 individual study credits toward graduation requirements applies to students admitted in the Fall semester of 2024 or later.

Course Requirements (Master's Program)

Thesis Master's Degree

Please check the common graduation requirements.

- **Graduation Credits:** at least 33 credits in total
- **Mandatory General Course Requirements:** at least 3 credits and completion of Ethics and Safety
 - Should select at least 1 course among CC500 Scientific Writing, CC510 Introduction to Computer Application, CC511 Probability and Statistics, CC512 Introduction to Materials Science and Engineering, CC513 Engineering Economy and Cost Analysis, CC522 Introduction to Instruments, CC530 Entrepreneurship and Business Strategies, CC532 Collaborative System Design and Engineering
- **Elective Course Requirements:** at least 18 credits
 - It is required to take at least 9 credits of AE500-level or above, or SPE500-level or above courses.
 - AE400-level joint undergraduate/graduate courses or 500-level courses of other department are recognized as elective courses.
 - Dual degree students may transfer part of credits earned from partner graduate school to be recognized as elective credits in accordance with the credit-transfer agreement.
- **Research Credits:** at least 12 credits

Interim Measures

- ① The above requirements are applicable to students entering KAIST in 2016 and thereafter.
 - Students entering KAIST in 2015 and before should earn 18 credits at least. (At least 15 credits should be obtained from courses opened in school of Mechanical and Aerospace Engineering, including over 6 credits of Aerospace Engineering courses(AEXXX).)
- ② Substitutive courses for the changed courses are determined by the department, and they are to be announced on the website. (ae.kaist.ac.kr)
- ③ CC500 Scientific Writing applies to all enrolled students.
- ④ The seminar completion requirements apply to all enrolled students regardless of their year of admission. However, general scholarship students and international students who were admitted between 2008 and 2022 are exempted from completing the seminar courses.

Course Requirements (Master's Program)

Coursework Master's Degree

Please check the common graduation requirements.

- **Graduation Credits:** at least 33 credits in total
- **Mandatory General Course Requirements:** at least 3 credits and completion of Ethics and Safety
 - Should select at least 1 course among CC500 Scientific Writing, CC510 Introduction to Computer Application, CC511 Probability and Statistics, CC512 Introduction to Materials Science and Engineering, CC513 Engineering Economy and Cost Analysis, CC522 Introduction to Instruments, CC530 Entrepreneurship and Business Strategies, CC532 Collaborative System Design and Engineering
- **Elective Course Requirements:** at least 27 credits
 - It is required to take at least 9 credits of AE500-level or above, or SPE500-level or above courses.
 - AE400-level joint undergraduate/graduate courses or 500-level courses of other department are recognized as elective courses.
 - Dual degree students may transfer part of credits earned from partner graduate school to be recognized as elective credits in accordance with the credit-transfer agreement.
- **Research Credits:** at least 3 credits
 - required to take at least 3 credits in individual study or seminar
- **Note:** Coursework Master's degree requirements are applicable only to the Dual Degree Program under the agreement with the partner institution, starting from the Fall semester, 2022.

Interim Measures

- ① The above requirements are applicable to students entering KAIST from fall semester 2022.
- ② Substitutive courses for the changed courses are determined by the department, and they are to be announced on the website. (ae.kaist.ac.kr)
- ③ CC500 Scientific Writing applies to all enrolled students.

Course Requirements (Doctoral Program)

Please check the common graduation requirements.

- **Graduation Credits:** at least 60 credits in total
- **Mandatory General Course Requirements:** 3 credits
 - Should select at least 1 course among CC500 Scientific Writing, CC510 Introduction to Computer Application, CC511 Probability and Statistics, CC512 Introduction to Materials Science and Engineering, CC513 Engineering Economy and Cost Analysis, CC522 Introduction to Instruments, CC530 Entrepreneurship and Business Strategies, CC532 Collaborative System Design and Engineering
- **Elective Course Requirements:** at least 27 credits
 - It is required to take at least 12 credits of AE500-level or above, or SPE500-level or above courses.
 - AE400-level joint undergraduate/graduate courses or 500-level courses of other department are recognized as elective courses.
 - Dual degree students may transfer part of credits earned from partner graduate school to be recognized as elective credits in accordance with the credit-transfer agreement.
- **Research Credits:** at least 30 credits

□ **Interim Measures**

- ① These course requirements apply to students admitted in 2016 or later.
 - Students admitted in 2015 or before should earn 27 major elective credits at least. (At least 15 credits should be earned from courses in School of Mechanical and Aerospace Engineering, including over 6 credits of Aerospace Engineering courses(AEXXX).)
- ② Substitutive courses for the changed courses are determined by the department, and they are to be announced on the website. (ae.kaist.ac.kr)
- ③ CC500 Scientific Writing applies to all enrolled students.