Major Course Requirements for Dept. of Mechanical Engineering

(For undergraduate students admitted in 2015 or before)

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

▣ **Elective Basic Courses**

○ Take over 9 credits including at least 2 courses among Introduction to Linear Algebra, Differential Equations and Applications, and Applied Mathematical Analysis.
※ Requirement for a Double Major: at least 3 credits

▣ **Major:** at least 59 credits

○ **Mandatory Major Courses:** 12 credits
(for students entering KAIST in 2014 and thereafter)
Basic Mechanical Practice(3), Mechanical Engineering Laboratory(3), Capstone Design I(3), Engineering Design(3)

- Students entering KAIST in 2012 and before: 9 credits
  Basic Mechanical Practice(3), Mechanical Engineering Laboratory(3), Capstone Design I(3)
- Students entering KAIST in 2013 and thereafter: 9 credits
  Basic Mechanical Practice(3), Mechanical Engineering Laboratory(3), Capstone Design I(3)

○ **Elective Major Courses:** at least 47 credits
(for students entering KAIST in 2014 and thereafter)
* Select at least 7 courses from below 9 courses:
  Solid Mechanics(3), Dynamics(3), Modeling and Control of Engineering Systems(3), Thermodynamics(3), Heat Transfer(3), Fluid Mechanics(3), Applied Electronics(3), Understanding of Materials and Processing(3), Mechanical Vibrations(3)
* Major courses in other departments are recognized up to 10 credits as major choices in mechanical engineering including 3 credits in the elective major course (CoE code) of the College of Engineering.

- Students entering KAIST in 2012 and before: at least 40 credits
  * Select at least 6 courses from below 8 courses:
    Solid Mechanics(3), Engineering Design(3), Dynamics(3), Modeling and Control of Engineering Systems(3), Thermodynamics(3), Fluid Mechanics(3), Applied Electronics(3), Understanding of Materials and Processing(3)
- Students entering KAIST in 2013 and thereafter: at least 40 credits
  * Select at least 6 courses from below 8 courses:
    Solid Mechanics(3), Engineering Design(3), Dynamics(3), Modeling and Control of Engineering Systems(3), Thermodynamics(3), Fluid Mechanics(3), Applied Electronics(3), Understanding of Materials and Processing(3)
  ※ Students entering KAIST in 2013 and thereafter must take over 59 major course credits including 10 credits from KAIST

▣ **Minor:** at least 21 credits

○ Must include mandatory major courses 'Basic Mechanical Practice(3), Mechanical Engineering Laboratory(3), Capstone Design I(3)' and at least 4 courses from 9 ME Basic(core) Elective major courses

▣ **Double Major:** at least 40 credits including mandatory major courses

※ In the event that major courses and double-major/minor courses overlap, up to 9 credits can be applied to both courses of study.
※ Completion of minor/double major courses is subject to the requirement of admission year, minor/double-major application period, or the graduation assessment period

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

○ Taking at least 3 credits of Graduation Research is mandatory, but may replace with Capstone Design II(3)
(Not applicable for double major students)
○ Up to 4 Individual Study credits are approved as Research Course credits. Seminar credits are approved as Elective Course credits

◎ Up to 21 credits earned by completing the 24 week Internship program ME Co-op1(INT482, INT495) can substitute for the Graduation Research(3), Electives Major courses(6) and Elective courses(12) toward graduation credits. Up to 3 credit earned by completing the ME Co-op2(INT492, INT495) can substitute for the Elective courses(3) toward graduation credits.

☐ **Transitional Measures**

○ Students admitted in 2015 or before may choose to be governed by the completion requirements applicable to students admitted in 2016 or after if desired.
○ Credit recognition of 24-Week Internship Program <ME Co-op 1(INT482, INT495)>, <ME Co-op 2(INT492, INT495)> applies to all enrolled students who participate in the Co-op program starting from the Spring Semester of 2023 However, for those students who have completed the <ME Co-op 1(INT482, INT495)> in 2022 Winter semester or before, it can be recognized as Graduation Research(3), Electives Major courses(3) and Elective courses(3) credits. And credit recognition of <ME Co-op 2(INT492, INT495)> is same as above.
○ Among these requirements, those that are recognized as the major selection course (CoE code) opened by the College of Engineering as a major selection shall be applied to all enrolled students.

Major Course Requirements for Dept. of Mechanical Engineering

(For undergraduate students admitted in 2016 and after)

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

※ Must choose and complete at least one of Advanced Major, Double Major, Minor and Individually Designed Major other than general major.

▣ **Elective Basic Courses**

○ Take over 9 credits including at least 2 courses among Introduction to Linear Algebra, Differential Equations and Applications, and Applied Mathematical Analysis.

※ Requirement for a Double Major: at least 3 credits

▣ **Major:** at least 48 credits

○ **Mandatory Major Courses:** 12 credits

Basic Mechanical Practice(3), Mechanical Engineering Laboratory(3), Capstone Design I(3), Engineering Design(3)

○ **Elective Major Courses:** 36 credits

Select at least 5 courses from below 9 courses:

Solid Mechanics(3), Dynamics(3), Modeling and Control of Engineering Systems(3), Thermodynamics(3), Heat Transfer(3), Fluid Mechanics(3), Applied Electronics(3), Understanding of Materials and Processing(3), Mechanical Vibrations(3)

- For students enrolled in 2020 or before, up to 10 credits acquired from other departments, which includes 3 credits from the elective major courses (CoE code) opened by the College of Engineering, are recognized as elective major credits in mechanical engineering.
- For students enrolled in 2021 and after, up to 3 credits acquired from elective major courses (CoE code) opened by the College of Engineering, are recognized as elective major credits in mechanical engineering and major course credits acquired from other departments are not recognized.

▣ **Advanced Major:** at least 15 credits

○ At least 15 credits from major courses excluding completed courses from general major

○ Should take all 9 Basic(core) Elective major courses

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

○ At least 12 credits from major courses of two or more departments except for the affiliated department

▣ **Minor:** at least 21 credits

○ At least 21 credits from major courses including over 2 mandatory major courses

※ Credits taken for minor and double major will not be counted towards ME major courses graduation requirements

▣ **Double Major:** at least 40 credits

○ At least 40 credits from major courses including 12 credits from mandatory major courses

※ Credits taken for minor and double major will not be counted towards ME major courses graduation requirements

※ Completion of minor and double major courses is based on the requirements of the admission year or the time of application.

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

○ Taking at least 3 credits of Graduation Research is mandatory, but may replace with Capstone Design II(3)
(Not applicable for double major students)

○ Up to 4 Individual Study credits are approved as Research Course credits. Seminar credits are approved as Elective Course credits

◎ Up to 21 credits earned by completing the 24 week Internship program ME Co-op1(INT482, INT495) can substitute for the Graduation Research(3), Electives Major courses(6) and Elective courses(12) toward graduation credits. Up to 3 credit earned by completing the ME Co-op2(INT492, INT495) can substitute for the Elective courses(3) toward graduation credits.

☐ **Transitional Measures**

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

○ Credit recognition of 24-Week Internship Program <ME Co-op 1(INT482, INT495)>, <ME Co-op 2(INT492, INT495)> applies to all enrolled students who participate in the Co-op program starting from the Spring Semester of 2023 However, for those students who have completed the <ME Co-op 1(INT482, INT495)> in 2022 Winter semester or before, it can be recognized as Graduation Research(3), Electives Major courses(3) and Elective courses(3) credits. And credit recognition of <ME Co-op 2(INT492, INT495)> is same as above.

○ Among these requirements, those that are recognized as the major selection course (CoE code) opened by the College of Engineering as a major selection shall be applied to all enrolled students.

Major Course Requirements for Dept. of Mechanical Engineering

(For undergraduate students admitted in 2022 and after)

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

※ Must choose and complete at least one of Advanced Major, Double Major, Minor and Individually Designed Major other than general major.

▣ **Elective Basic Courses**

○ Take over 9 credits including at least 2 courses among Introduction to Linear Algebra, Differential Equations and Applications, and Applied Mathematical Analysis.

※ Requirement for a Double Major: at least 3 credits

▣ **Major: at least 45 credits**

○ **Mandatory Major Courses:** 9 credits

Basic Mechanical Practice(3), Capstone Design I(3), Engineering Design(3)

- Excess mandatory major course credits (exceeding the required 9 credits) will be recognized as elective major credits

○ **Elective Major Courses:** 36 credits

Select at least 5 courses from below 9 courses:
Solid Mechanics(3), Dynamics(3), Modeling and Control of Engineering Systems(3), Thermodynamics(3), Heat Transfer(3), Fluid Mechanics(3), Applied Electronics(3), Understanding of Materials and Processing(3), Mechanical Vibrations(3)

- For students enrolled in 2021 and after, up to 3 credits acquired from elective major courses (CoE code) opened by the College of Engineering, are recognized as elective major credits in mechanical engineering and major course credits acquired from other departments are not recognized.

▣ **Advanced Major:** at least 15 credits

○ At least 15 credits from major courses excluding completed courses from general major

○ Should take all 9 Basic(core) Elective major courses

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

○ At least 12 credits from major courses of two or more departments except for the affiliated department

▣ **Minor:** at least 21 credits

○ At least 21 credits from major courses including over 2 mandatory major courses

※ Credits taken for minor and double major will not be counted towards ME major courses graduation requirements

▣ **Double Major:** at least 40 credits

○ At least 40 credits from major courses including 9 credits from mandatory major courses

※ Credits taken for minor and double major will not be counted towards ME major courses graduation requirements

※ Completion of minor and double major courses is based on the requirements of the admission year or the time of application.

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

○ Taking at least 3 credits of Graduation Research is mandatory, but may replace with Capstone Design II(3)
(Not applicable for double major students)

○ Up to 4 Individual Study credits are approved as Research Course credits. Seminar credits are approved as Elective Course credits

◎ Up to 21 credits earned by completing the 24 week Internship program ME Co-op1(INT482, INT495) can substitute for the Graduation Research(3), Electives Major courses(6) and Elective courses(12) toward graduation credits. Up to 3 credit earned by completing the ME Co-op2(INT492, INT495) can substitute for the Elective courses(3) toward graduation credits.

☐ **Transitional Measures**

○ These requirements apply to all students admitted in 2022 Spring and thereafter.

○ Students admitted in [2015 or before] and [2016 and after] may choose to follow the requirements listed above, if desired.

○ Credit recognition of 24-Week Internship Program <ME Co-op 1(INT482, INT495)>, <ME Co-op 2(INT492, INT495)> applies to all enrolled students who participate in the Co-op program starting from the Spring Semester of 2023 However, for those students who have completed the <ME Co-op 1(INT482, INT495)> in 2022 Winter semester or before, it can be recognized as Graduation Research(3), Electives Major courses(3) and Elective courses(3) credits. And credit recognition of <ME Co-op 2(INT492, INT495)> is same as above.

○ Among these requirements, those that are recognized as the major selection course (CoE code) opened by the College of Engineering as a major selection shall be applied to all enrolled students.

Major Course Requirements for Dept. of Mechanical Engineering

(For undergraduate students admitted in 2023 and after)

▣ **Credit Requirements for Graduation:** Required to complete a total of more than **138** credits

※ Must choose and complete at least one among Advanced Major, Double Major, Minor, Individually Designed Major, Designated Interdisciplinary Major and Special Designated Major other than general major.

▣ **Elective Basic Courses**

○ Take over 9 credits including at least 2 courses among Introduction to Linear Algebra, Differential Equations and Applications, and Applied Mathematical Analysis.

※ Requirement for a Double Major: at least 3 credits

▣ **Major: at least 45 credits**

○ **Mandatory Major Courses:** 9 credits

Basic Mechanical Practice(3), Capstone Design I(3), Engineering Design(3)

- Excess mandatory major course credits (exceeding the required 9 credits) will be recognized as elective major credits

○ **Elective Major Courses:** 36 credits

Select at least 5 courses from below 9 courses:
Solid Mechanics(3), Dynamics(3), Modeling and Control of Engineering Systems(3), Thermodynamics(3), Heat Transfer(3), Fluid Mechanics(3), Applied Electronics(3), Understanding of Materials and Processing(3), Mechanical Vibrations(3)

- For students enrolled in 2021 and after, up to 3 credits acquired from elective major courses (CoE code) opened by the College of Engineering, are recognized as elective major credits in mechanical engineering and major course credits acquired from other departments are not recognized.

▣ **Advanced Major:** at least 15 credits

○ At least 15 credits from major courses excluding completed courses from general major

○ All 9 Basic(core) elective major courses must be completed for students entering in 2016-2023.

○ For students entering in 2024 and beyond, only courses offered by the Department of Mechanical Engineering will be accepted.

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

○ At least 12 credits from major courses of two or more departments except for the affiliated department

▣ **Minor:** at least 21 credits

○ At least 21 credits from major courses including over 2 mandatory major courses

※ Credits taken for minor and double major will not be counted towards ME major courses graduation requirements

▣ **Double Major:** at least 40 credits

○ At least 40 credits from major courses including 9 credits from mandatory major courses

※ Credits taken for minor and double major will not be counted towards ME major courses graduation requirements

※ Completion of minor and double major courses is based on the requirements of the admission year or the time of application.

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

○ Taking at least 3 credits of Graduation Research is mandatory, but may replace with Capstone Design II(3)
(Not applicable for double major students)

○ Up to 4 Individual Study credits are approved as Research Course credits. Seminar credits are approved as Elective Course credits

◎ Up to 21 credits earned by completing the 24 week Internship program ME Co-op1(INT482, INT495) can substitute for the Graduation Research(3), Electives Major courses(6) and Elective courses(12) toward graduation credits. Up to 3 credit earned by completing the ME Co-op2(INT492, INT495) can substitute for the Elective courses(3) toward graduation credits.

☐ **Transitional Measures**

○ These requirements apply to all students admitted in 2023 Spring and thereafter.

○ Credit recognition of 24-Week Internship Program <ME Co-op 1(INT482, INT495)>, <ME Co-op 2(INT492, INT495)> applies to all enrolled students who participate in the Co-op program starting from the Spring Semester of 2023 However, for those students who have completed the <ME Co-op 1(INT482, INT495)> in 2022 Winter semester or before, it can be recognized as Graduation Research(3), Electives Major courses(3) and Elective courses(3) credits. And credit recognition of <ME Co-op 2(INT492, INT495)> is same as above.

○ Among these requirements, those that are recognized as the major selection course (CoE code) opened by the College of Engineering as a major selection shall be applied to all enrolled students.

Major Course Requirements for Dept. of Mechanical Engineering (For Master's Program)

Thesis Master's Degree Program

▣ **Credit Requirement for Graduation**: Required to complete a total of more than 36 credits

▣ **Mandatory General Course(CC):** 3 credits

○ 1 course among CC500 Scientific Writing / CC510 Introduction to Computer Application / CC511 Probability and Statistics / CC512 Introduction to Materials and Engineering / CC522 Introduction to Instruments / CC530 Entrepreneurship and Business Strategies.

※ CC010 Special Lecture on Leadership (non-credit, this applies to students entering KAIST in 2002 and thereafter; general scholarship students, international students are excluded)

※ CC020 Ethics and Safety I

※ CC532 Collaborative System Design and Engineering credits are recognized as CC courses to only Renaissance Program students and general scholarship students.

▣ **Mandatory Major Courses:** NONE

▣ **Elective Courses:** at least 21 credits

○ Should take more than 12 credits offered by the ME or Ocean System Engineering department. For dual degree students (excluding KAIST-TUB dual degree), credits approved by home universities can be transferred to Elective courses offered by ME department. (Please note that not all Elective course are available. Must seek prior approval for credit recognition)

○ Free Electives do not count as electives

▣ **Research Courses:** at least 12 credits (Must include 2 Seminar credits)

☐ **Transitional Measures**

○ These requirements apply to all students admitted in March 1st, 2016 and thereafter.

○ Among these requirements, those that including Ocean System Engineering department course in Elective course(12 credits) shall be applied to all enrolled students.

○ All students admitted in 2023 Spring and thereafter (regardless of nationality and student division) must complete seminar classes (Exemption that had been applied to international students, general scholarship students etc. is removed)

Classification	2016~2022	2023~
Requirements	▣ Research Courses: at least 12 credits (Must include 2 Seminar credits) ○ International students, Changwon-KAIST program students and general scholarship students admitted in 2009 and thereafter are exempt from seminar credits.	▣ Research Courses: at least 12 credits (Must include 2 Seminar credits)
	*For further details, please refer to common graduation requirements and respective requirements corresponding to the student's year of admission	

○ Substitutive courses for closed courses are to be determined by the department, and are to be announced on the Website. (http://me.kaist.ac.kr/mekaist-kr/)

Major Course Requirements for Dept. of Mechanical Engineering
(For Doctoral Program)

▣ **Credit Requirement for Graduation:** Required to complete a total of more than 63 credits

▣ **Mandatory General Courses(CC): 3 Credits**

○ 1 course from CC500 Scientific Writing / CC510 Introduction to Computer Application / CC511 Probability and Statistics / CC512 Introduction to Materials and Engineering / CC522 Introduction to Instruments / CC530 Entrepreneurship and Business Strategies.

▣ **Mandatory Major Courses:** NONE

▣ **Elective Courses:** at least 30 credits

- "No free electives" under elective requirements will apply to all current students beginning Spring 2023.

▣ **Research Courses:** at least 30 credits

▣ **Remarks**

○ Course requirements for Ph.D. candidates who have graduated from universities other than KAIST or other majors varies, thus must be decided by the recommendation of Academic Advisor, Curriculum Committee and the department head's approval.

☐ **Transitional Measures**

○ These requirements apply to all students admitted in 2024 Spring and thereafter.
Students admitted in 2022 and before should follow the requirements for their corresponding year of admission

○ Requirement summary based on admission year

Classification	2016~2022	2023~
Requirements	▣ Credit Requirement for Graduation: - at least 69 credits ▣ Elective Course - at least 36 credits	▣ Credit Requirement for Graduation: - at least 63 credits ▣ Elective Course - at least 30 credits
	*For further details, please refer to common graduation requirements and respective requirements corresponding to the student's year of admission	

○ Substitutive courses for closed courses are to be determined by the department, and are to be announced on the Website. (http://me.kaist.ac.kr/mekaist-kr/)

- "No free electives" under elective requirements will apply to all current students beginning Spring 2023.

☐ **Note**

Major Course Requirements for Dept. of Mechanical Engineering
(For MS-PhD Integrated Program)

○ Will abide by the existing master's and Ph. D program requirements..
○ Course credits and research credits earned during master's course may be accumulated.

※ These requirements apply to all students from February 1st, 2009.