

**Major Course Requirements for  
Dept. of Materials Science and Engineering  
(For undergraduate students admitted in 2015 or before)**

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**Please check the common graduation requirements.**

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- **Credit Requirement for Graduation:** Required to complete a total of more than 130 credits
  
- **Major:** at least 42 credits
  - **Mandatory Major Courses:** at least 18 credits  
MS212 Thermodynamics of Materials, MS213 Crystallography and Diffraction, MS310 Quantum Chemistry for Materials Scientists, MS311 Phase Transformation and Microstructure Evolution, MS321 Advanced Materials Lab I, MS322 Advanced Materials Lab II
  - **Elective Major Courses:** at least 24 credits  
Up to two Elective Major courses(CoE code) opened by the College of Engineering are recognized as Elective Major Courses.
  
- **Minor:** at least 18 credits
  - at least 18 credits from major courses, including 9 credits in required major courses.
  
- **Double Major:** at least 40 credits
  - at least 40 credits from major courses, including 18 credits in required major courses.
  
- **Research Courses:** at least 3 credits
  - Students must take 3 credits for Research in Materials Science and Engineering (MS490).
  - Credits from seminar and Individual Study are counted as Research Course credits.
  - ※ Students having a double major are exempt.
  
- **Transitional Measures**
  - Students admitted in 2015 or before may choose to be governed by the completion requirements applicable to students admitted in 2016 and after if desired.
  - Students who entered in 2014 or later should fulfill current degree

requirements. Students who entered before 2013 should refer to the degree requirements in the respective year.

- Requirement that recognizes the Elective Major course(CoE code) opened by the College of Engineering as a Elective Major shall apply to all students.

**Major Course Requirements for  
Dept. of Materials Science and Engineering  
(For undergraduate students admitted in 2016 and after)**

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**Please check the common graduation requirements.**

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- **Credit Requirement for Graduation:** Required to complete a total of more than 136 credits
  - ※ Required to choose and complete one among Advanced Major, Double Major, Minor, and Individually Designed Major.
  
- **Major:** at least 42 credits
  - **Mandatory Major Courses:** at least 18 credits  
MS212 Thermodynamics of Materials, MS213 Crystallography and Diffraction, MS310 Quantum Chemistry for Materials Scientists, MS311 Phase Transformation and Microstructure Evolution, MS321 Advanced Materials Lab I, MS322 Advanced Materials Lab II
  - **Elective Major Courses:** at least 24 credits  
Up to two Elective Major courses(CoE code) opened by the College of Engineering are recognized as Elective Major Courses.
  
- **Advanced Major:** at least 15 credits
  - from Elective major course
  
- **Individually Designed Major:** at least 12 credits
  - Students must take 12 credits or more of major courses from more than two departments other than Materials Science and Engineering.
  
- **Minor:** at least 18 credits
  - at least 9 credits each from mandatory and elective major course.
  - ※ No credits from the same course will be doubly counted to satisfy major and minor department requirements.
  
- **Double Major:** at least 40 credits
  - at least 40 credits from major courses, including 18 credits in required major courses.
  - ※ Up-to 6 credits can be doubly counted to satisfy both major department requirements.

**Research Courses:** at least 3 credits

- Students must take 3 credits for Research in Materials Science and Engineering(MS490).
- Credits from seminar and Individual Study are counted as Research Course credits.
- ※ Students having a double major are exempt.

**Transitional measures**

- Students admitted in 2015 or before may choose to be governed by the completion requirements listed above if desired.
- Requirement that recognizes the Elective Major course(CoE code) opened by the College of Engineering as a Elective Major shall apply to all students.

**Major Course Requirements for  
Dept. of Materials Science and Engineering  
(For undergraduate students admitted in 2023 and after)**

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**Please check the common graduation requirements.**

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- **Credit Requirement for Graduation:** Required to complete a total of more than 138 credits
  - ※ Required to choose and complete one among Advanced Major, Double Major, Minor, Individually Designed Major, Designated interdisciplinary major and Special Designated major.
  
- **Major:** at least 42 credits
  - **Mandatory Major Courses:** at least 18 credits  
MS212 Thermodynamics of Materials, MS213 Crystallography and Diffraction, MS310 Quantum Chemistry for Materials Scientists, MS311 Phase Transformation and Microstructure Evolution, MS321 Advanced Materials Lab I, MS322 Advanced Materials Lab II
  - **Elective Major Courses:** at least 24 credits  
Up to two Elective Major courses(CoE code) opened by the College of Engineering are recognized as Elective Major Courses.
  
- **Advanced Major:** at least 12 credits
  - from Elective major course
  
- **Individually Designed Major:** at least 12 credits
  - Students must take 12 credits or more of major courses from more than two departments other than Materials Science and Engineering.
  
- **Minor:** at least 18 credits
  - at least 9 credits each from mandatory and elective major course.
  - ※ No credits from the same course will be doubly counted to satisfy major and minor department requirements.
  
- **Double Major:** at least 40 credits
  - at least 40 credits from major courses, including 18 credits in required major courses.
  - ※ Up-to 6 credits can be doubly counted to satisfy both major department

requirements.

**Research Courses:** at least 3 credits

- Students must take 3 credits for Research in Materials Science and Engineering(MS490).
- Credits from seminar and Individual Study are counted as Research Course credits.
- ※ Students having a double major are exempt.

**Transitional measures**

- Students who entered in 2023 or later should fulfill the current degree requirements.
- Students who entered before 2022 should refer to the degree requirements in the respective year.
- Requirement that recognizes the Elective Major course(CoE code) opened by the College of Engineering as a Elective Major shall apply to all students.

**Major Course Requirements for  
Dept. of Materials Science and Engineering  
(For Master's Program)**

**Thesis Master's Degree Program**

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**Please check the common graduation requirements.**

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- **Credit Requirement for Graduation:** Required to complete a total of more than 33 credits
  
- **Mandatory General Courses:** 3 credits and Completion of the Ethics and Safety course  
CC512 is acknowledged as mandatory general course for students in other major.
  
- **Mandatory Major Courses:** 3 credits  
MS511 Thermodynamics and Phase Equilibria
  
- **Elective Courses:** at least 15 credits
  - should take more than 6 credits offered by the department of Materials Science and Engineering
  - ※ Other Elective Courses are not counted as "MSE" Elective Course.
  
- **Research Courses:** at most 12 credits. (including 2 credits in Seminar)

□ **Transitional Measures**

- Students who entered in 2023 or later should fulfill the current degree requirements.
- Students who entered before 2022 should refer to the degree requirements in the respective year.
- ※ In the elective course requirements, 'Other Elective Courses are not counted as "MSE" Elective Course' applies to all students as of the spring semester, 2023.

**Major Course Requirements for  
Dept. of Materials Science and Engineering  
(For Doctoral Program)**

**Please check the common graduation requirements.**

■ **Credit Requirement for Graduation:** Required to complete a total of more than 60 credits

■ **Mandatory General Courses:** 3 credits and Completion of the Ethics and Safety course  
CC512 is acknowledged as mandatory general course for students in other major.

■ **Mandatory Major Courses:** 3 credits  
MS511 Thermodynamics and Phase Equilibria

■ **Elective Courses:** at least 24 credits  
- should take more than 9 credits offered by the department of Materials Science and Engineering  
※ Other Elective Courses are not counted as "MSE" Elective Course.

■ **Research Courses:** at least 30 credits.(including 2 credits in Seminar)  
※ The course credits earned in the Master's course work can be used towards the Doctoral degree (except research credits).

□ **Transitional Measures**

- Students who entered in 2023 or later should fulfill the current degree requirements.
- Students who entered before 2022 should refer to the degree requirements in the respective year.
- ※ In the elective course requirements,'Other Elective Courses are not counted as "MSE" Elective Course' applies to all students as of the spring semester, 2023.



**Major Course Requirements for  
Dept. of Materials Science and Engineering  
(For MS-PhD Integrated Program)**

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**Please check the common graduation requirements.**

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- **Credit Requirement for Graduation:** Required to complete a total of more than 60 credits
  
- **Mandatory General Courses:** 3 credits and Completion of the Ethics and Safety course  
CC512 is acknowledged as mandatory general course for students in other major.
  
- **Mandatory Major Courses:** 3 credits  
MS511 Thermodynamics and Phase Equilibria
  
- **Elective Courses:** at least 24 credits
  - should take more than 9 credits offered by the department of Materials Science and Engineering
  - ※ Other Elective Courses are not counted as "MSE" Elective Course.
  
- **Research Courses:** at least 30 credits.(including 2 credits in Seminar)
  - ※ The curriculum credits and research credits earned from the master's course may be cumulatively counted.

□ **Transitional Measures**

- Students who entered in 2023 or later should fulfill the current degree requirements.
- Students who entered before 2022 should refer to the degree requirements in the respective year.
- ※ In the elective course requirements,'Other Elective Courses are not counted as "MSE" Elective Course' applies to all students as of the spring semester, 2023.