

**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 Master's Program)**

**Thesis Mater'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 1AU  
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

■ **Research Courses:** at most 12 credits. (including 2 credits in Seminar)  
- Foreign students are allowed to take HSS586 or HSS587 instead of 2 credits in Seminar.

□ **Transitional Measures**

- Students who entered in 2017 or later should fulfill the current degree requirements.
- Students who entered before 2016 should refer to the degree requirements in the respective year.(For integrated master and doctoral program, the year of entering the master's course is applicable)
- The exemption regulation of Seminar course requirements for foreign students is applicable to all foreign students as of 2011.

**Major Course Requirements for  
Dept. of Materials Science and Engineering  
(For Doctoral 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 1AU  
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
  
- **Research Courses:** at least 30 credits.(including 2 credits in Seminar)
  - Foreign students are allowed to take HSS586 or HSS587 instead of 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 2017 or later should fulfill the current degree requirements.
- Students who entered before 2016 should refer to the degree requirements in the respective year.(For integrated master and doctoral program, the year of entering the master's course is applicable)
- The exemption regulation of Seminar course requirements for foreign students is applicable to all foreign students as of 2011.

**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 1AU  
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
  
- **Research Courses:** at least 30 credits.(including 2 credits in Seminar)
  - Foreign students are allowed to take HSS586 or HSS587 instead of 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 2017 or later should fulfill the current degree requirements.
- Students who entered before 2016 should refer to the degree requirements in the respective year.(For integrated master and doctoral program, the year of entering the master's course is applicable)
- The exemption regulation of Seminar course requirements for foreign students is applicable to all foreign students as of 2011.