

To: The Engineering Faculty

From: The Faculty of the School of Materials Engineering

Date: October 9, 2023

Re: Changes to the MSE Minor program

The faculty of the School of Materials Engineering has approved the following change to the MSE Minor. This action is now submitted to the Engineering Faculty with a recommendation for approval.

Justification:

The changes to the minor will provide opportunities for students to explore a wider range of MSE topics such as those aligned with Purdue's Comprehensive Semiconductors and Microelectronics Program.

Description:

A simple change in the core requirements was made in addition to reducing the number of credit hours from 18 to 15. A comparison of these changes is made on the following page followed by the complete program.



David Bahr, Head
School of Material Engineering

Comparison between the current and proposed MSE Minor are:

Current MSE Minor

A minor in Materials Engineering is available to students with an entering cumulative GPA of 3.2 or better. An MSE Minor will be granted on the completion of the following 18 hrs

The core requirements are:

MSE 23000 Structure and Properties of Materials Engineering (Offered Fall and <u>Spring</u>)	3 cr
<i>(NUC 32000 and CE 23100 are also acceptable)</i>	
MSE 26000 Thermodynamics of Materials (Offered Fall and Spring)	3 cr
MSE 33000 Processing and Properties of Materials (Offered Spring)	3 cr

And three of the following electives:

MSE 27000 Atomistic Materials Science (Offered Fall and Spring)	3 cr
MSE 37000 Electrical, Optical, and Magnetic Properties of Materials (Offered Fall)	3 cr
MSE 34000 Transport Phenomena (Offered Fall and Spring)	3 cr
MSE 38200 Mechanical Response of Materials (Offered Spring)	3 cr
MSE 42000 Structure & Properties of Organic Materials (Offered Fall)	3 cr
MSE 44500 Materials Engineering Systems Analysis (Offered Fall)	3 cr
MSE 49900 Undergraduate Research in Materials Engineering	1-3 cr
MSE 5xxxx level courses (with Faculty Approval) (Offered Fall and Spring)	3 cr

Proposed changes

A minor in Materials Engineering is available to students with an entering cumulative GPA of 3.2 or better. An MSE Minor will be granted on the completion of the following 15 credit hours.

The core requirements are:

MSE 23000 Structure and Properties of Materials Engineering (Offered Fall and Spring)	3 cr
<i>(NUC 32000 and CE 23100 are also acceptable)</i>	

and two of the following:

MSE 26000 Thermodynamics of Materials (Offered Fall and Spring)	3 cr
MSE 33000 Processing and Properties of Materials (Offered Spring)	3 cr
MSE 27000 Atomistic Materials Science (Offered Fall and Spring)	3 cr
MSE 37000 Electrical, Optical, and Magnetic Properties of Materials (Offered Fall)	3 cr

And two of the following electives:

MSE 34000 Transport Phenomena (Offered Fall and Spring)	3 cr
MSE 38200 Mechanical Response of Materials (Offered Spring)	3 cr
MSE 42000 Structure & Properties of Organic Materials (Offered Fall)	3 cr
MSE 44500 Materials Engineering Systems Analysis (Offered Fall)	3 cr
MSE 49900 Undergraduate Research in Materials Engineering	1-3 cr
MSE 5xxxx level courses (with Faculty Approval) (Offered Fall and Spring)	3 cr

MSE Minor Requirements (with proposed changes)

A minor in Materials Engineering is available to students with an entering cumulative GPA of 3.2 or better. An MSE Minor will be granted on the completion of the following 15 credit hours.

The core requirements are:

MSE 23000 Structure and Properties of Materials Engineering (Offered Fall and Spring) 3cr
(NUC 32000 and CE 23100 are also acceptable)

and two of the following:

MSE 26000 Thermodynamics of Materials (Offered Fall and Spring)	3 cr
MSE 33000 Processing and Properties of Materials (Offered Spring)	3 cr
MSE 27000 Atomistic Materials Science (Offered Fall and Spring)	3 cr
MSE 37000 Electrical, Optical, and Magnetic Properties of Materials (Offered Fall)	3 cr

And two of the following electives:

MSE 34000 Transport Phenomena (Offered Fall and Spring)	3 cr
MSE 38200 Mechanical Response of Materials (Offered Spring)	3 cr
MSE 42000 Structure & Properties of Organic Materials (Offered Fall)	3 cr
MSE 44500 Materials Engineering Systems Analysis (Offered Fall)	3 cr
MSE 49900 Undergraduate Research in Materials Engineering	1-3 cr
MSE 5xxxx level courses (with Faculty Approval) (Offered Fall and Spring)	3 cr

Notes:

- No laboratory classes can fulfill the MSE minor requirements. This includes MSE 23500, MSE 33500, MSE 36700, MSE 43000, MSE 44000.
- A maximum of 3 credit hours of MSE 49900 can be used towards the MSE minor requirements.
- Up to two MSE 5xxxx level courses can be taken to fulfill the 15 credit hours required.
- If a student is BME, ChE, ME, or NE, then MSE 34000 is not allowed, and a different course must be selected from rest of elective list.
- A grade of "C" (not "C-") or better in all of the courses taken toward the MSE minor is required.
- Generally, all of the above prescribed minor courses must be taken at the Purdue West Lafayette campus.

Course prerequisites:

Generally, all the above prescribed minor courses must be taken at the Purdue West Lafayette campus. The pre- and co-requisites for MSE courses relevant to the minor are:

Class	Pre- and Co-requisites
MSE 23000	Pre: CHM 11500, MA 16500
MSE 26000	Pre: MA 26100; Co: MSE 23000, CHM 11600 (or Consent of Instructor)
MSE 27000	Co: MA 26100, MA 26500 (or MA 26200); MSE 23000
MSE 33000	Pre: MSE 23000
MSE 34000	Pre: MA 26600 (or MA 26200); MSE 26000
MSE 37000	Pre: MSE 23000, MSE 27000; PHYS 24100 (or PHYS 27200)
MSE 38200	Pre: MA 26500 (or MA 26200) and Statics/Dynamics Course
MSE 42000	Pre: MSE 23000
MSE 44500	Pre-MSE 33000, MSE 34000 (or equivalent) and Consent of Instructor
MSE 49900	Prior project approval from MSE faculty
<i>MSE 5xxxx</i>	<i>Pre: MSE 23000 and Consent of Instructor (prerequisites will vary by course)</i>