From:	Smith, Randy
To:	Sumption, Michael
Cc:	Sutherland, Sue; Herrmann, Samantha; Smith, Randy; Griffiths, Rob; Reed, Katie; Duffy, Lisa; Hunt, Ryan; Mills, Michael; Matyas, Cory; Tomasko, David
Subject:	Proposal to revise the Materials Science and Engineering curriculum
Date:	Friday, June 12, 2026 2:43:43 PM
Attachments:	image001.png

Mike:

The proposal from the Department of Materials Science and Engineering to revise the Bachelor of Science in Materials Science and Engineering was approved by the Council on Academic Affairs at its meeting on June 11, 2026. Thank you for attending the meeting to respond to questions/comments.

No additional level of internal review/approval is necessary. This action will be included in the Council's next Annual Activities Report to the University Senate (July 2026).

The Office of the University Registrar will work with you on any implementation issues.

Please keep a copy of this message for your file on the proposal and I will do the same for the file in the Office of Academic Affairs.

If you have any questions please contact the Chair of the Council, Professor Sue Sutherland (.43), or me.

I wish you success with this important program development.

Randy

THE OHIO STATE UNIVERSITY

W. Randy Smith, Ph.D.
Vice Provost for Academic Programs
Office of Academic Affairs
University Square South, 15 E. 15th Avenue, Columbus, OH 43201
614-292-5881 Office
smith.70@osu.edu
Assisted by:
Katie Reed
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MSE Responses to Questions from the Subcommittee

1) Your proposal involves changing the credit hours requirement that may impact other departments in terms of teaching and space and we have a few questions pertaining directly to that:

   a) How many students are enrolled in the program currently?

   Presently 185, distributed across all four years

   b) Have you had conversations with Math and Chemistry about the proposed changes and, if so, what feedback did they provide?

   We did not ask these departments specifically about this change, although in terms of Math 2173 and 2174 instead of 2177, this is a well-known option, as MAE, BME, civil, and Eng Physics take this route. With respect to Chem 1250, Aero/Mech Eng, Civil, and EE use this route.

   c) Have there been conversations around how removing ME2040 will impact staffing and space needs for that course?

   It seems premature to notify ME until the curriculum change is made (and presumably the change should be tied to MSE student needs first and foremost), although we would of course do so after approval. ME2040 would be impacted in the fall of 2028 assuming this revision is approved and takes place in fall of 26, so there would be time to plan for any changes.

   In any case ME2040 is a significant size class, and our student (approximately 50 per year) would not be a critical difference for this MAE course. Looking on

   https://eari.osu.edu/enrollment/queries/PSEnroll4.asp?strm=1248&DPT=MECHENG&YrQtr=20244, the enrollment seems to be about 350 with two sections, with variations year to year about the same as the change our student numbers would make.

   D) Can you speak to how the department will be impacted by the changes in the physical materials and modeling simulation labs? Do you have the space and the faculty to take on the additional workload or is there a budget for the additional resources required?

   Yes, zero additional budget/resources/space is(are) needed. This modification was suggested by the two instructors leading these classes in order to achieve greater synergy, and the merging should be both straightforward and beneficial. We will be tracking student performance after this and comparing to that from the student performance in the previous (separate) courses

MSE Responses to Questions from the Subcommittee

2. Similarly, we had questions about student success with the new changes:

A) Data from recent years show higher DFW rates with Chem 1250 vs Chem 1210 and 1220. Can you speak to how 1250 has been revamped and improved in a way that will support MSE students who would have been more successful with two chemistry courses?

While higher DFW rates are not desirable, are these rates compared for the classes overall (all students enrolled)? If so, this might have some self-selection bias (e.g., since 1210 and 1220 are required by more chemistry intensive programs like bioengineering and chemical engineering, students who take these classes may have a greater affinity for chemistry). Or, on the other hand are these comparisons for students in the same engineering program? Also, I note that these rates are of course for success in the class, rather than in the program.

Our goal here is overall success in the MSE program. While in principle we like the 1210 and 1220 sequence, the version of Chem 1250 as it was revised in 2021/2022 seems to have fixed problems that kept us from using it prior to that date (topics and textbook were revised in 2021/2022). The previous version of 1250 seemed to have the same problems that math 2177 presently has – too much information, too fast. It was revamped and focuses on what for us are the essentials.

Here is the input from our MSE advisor: The Chem 1250 became a well combined accelerated 1210 & 1220. The woman who re-imagined it was very thoughtful about her approach. It went from a course that students loathed and found to be one of the most difficult in their program to a course that no one complains about, I don't often see failing grades. That's the feedback I have about it.

Our present students do not show gaps in chemistry, but they definitely do show gaps in math, and so it seems on balance sensible to use chem 1250 to allow a deeper math sequence. Of course, we could require both 1210/1220 and 2173/2174 sequences – but if we do we are at the very top of the allowable credit hours programmatically, and this seems unjustified at present. This may be revisited in the future if problems are seen.

i. Some Engineering majors that require CHEM (ex. Aerospace, Civil, Electrical, Mechanical) allow students to substitute just 1210 in place of 1250. Will this be an option for MSE?

No, this would not make sense, especially if put into juxtaposition with the above concern of going from 1210+1220 to 1250. While it may make sense that the above Engineering disciplines (Aero, Civil, Electrical and Mech) need less chemistry, Chem 1220 and 1250

both treat some MSE critical areas like thermodynamics and the second law, kinetics, and electrochemistry, so, no, 1210 alone is insufficient and will not be an option.

B) Similarly, the data show that Math 2173 has a higher DFW rate than Math 2177. Have you had conversations on providing additional support to students who may need it?

i) Do you have any data that show that stretching out the math requirement will improve student retention? Or are there concepts covered in the two courses that students are not receiving in 2177?

Taking both of these questions together: Right now we have a tutoring program to help students who are having trouble in our MSE classes, and often their problems stem from a lack of sufficient math preparation (or, perhaps better, math retention). In fact, it is the lack of math preparation/retention which was one of the key reasons (not the only one) to implement the tutoring program. It is not that Math 2177 doesn't in principle cover the topics, but it is that it covers so many topics so fast in one class. Here is the description right from the syllabus: This class includes…..Multiple integrals, line integrals; matrix algebra; linear (ordinary and partial) differential equations. These were taught as three separate classes at one point.

We have considered various options for dealing with this problem, one of which was developing an MSE class which might help bridge the gap between where students were at the end of Math 2177 and where they needed to be for the courses (mathematical methods in materials science?). But, we landed on requiring a more in-depth Math sequence, since it seemed that the main issue was lack of concept retention from an over-packed 2177.

As far as student retention, I presume you mean student retention in the MSE program. No, we don't have comparative data now (because we have been using 2177 exclusively), but if we can make the presently proposed revision, we will be able to see how student progress to graduation is altered over the next several years due to this change. If this change is not helpful, then we would revisit it at that time.

3. Can you provide some information about the general assessment plan for this program, and specifically how you will monitor the impact these changes are having on students success in the program?

The MSE program is quite active in its ABET evaluations, and of course maps numerous specific course outcomes as part of this process. Some of these would be particularly useful metrics for evaluating the impact of these proposed changes. In

particular, outcomes from MSE 2251 (Themo), MSE 3141 (structural transformation) and MSE 3151 (transport and kinetics) would be good measures of these proposed changes.

4. Thank you again for your responses to our questions. I did hear back from Math and Chemistry and math has no concerns with enrollment, I did get a few questions from Chemistry that I'm hoping you can address before Thursday so I can include them in my presentation:

   A) A couple concerns revolved around students no longer being required to take organic chemistry. I see that students can count 2310 or 2510 as technical electives, and as I understand it many students will need to/greatly benefit from taking it depending on their future career goals. Do you anticipate most of your students still needing to take organic chemistry and, if so, how will you ensure this is clearly communicated to them?

   Yes, these classes in organic chemistry have been allowed as a technical elective, and this was typically used by our MSE students who were specializing in polymers and biomaterials. This has not been a requirement for them, but has been strongly encouraged for MSE students in those specializations (our specializations are not formal, they are informal focus areas). This will continue to be the case, these organic chem classes will still count as TEs, and still will be strongly encouraged for MSE students focusing in polymers and biopolymers.

   B) Will students who transfer in after their first year be allowed to substitute 1210+1220 instead of 1250 if they have already completed that sequence?

   Yes, in fact, it was not our intent to insist that students take 1250, if they prefer to take 1210+1220, we would be more than happy to accept that

   C) At this point, the department does not have the information they need to confidently predict how the change will impact 1250 enrollments. Is it possible for you to analyze how many students have been utilizing the 1210/1220 option to get an idea how many students will be adding to the 1250 enrollments?

   Right now, nearly all of the MSE students take the 1210+1220 route, and if we change to 1250, then that would be between 60-70 per year.

THE OHIO STATE UNIVERSITY

College of Engineering

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To: Randy Smith, Vice Provost for Academic Programs, Office of Academic Affairs
From: Cory Matyas, Assistant Dean for Curriculum and Assessment
Date: March 25, 2026
Re: Proposal to Revise Materials Science and Engineering Curriculum

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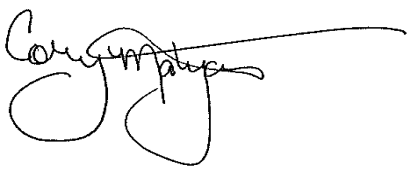
The Department of Materials Science and Engineering proposes a curriculum revision that reduces required credit hours from 127 to 123, streamlines chemistry and math requirements, restructures technical and MSE electives, and replaces separate modeling and physical labs with integrated 4-credit lab courses to improve coherence, preparation, and alignment with engineering standards

These changes are intended to take effect for students entering Autumn 2026.

The Engineering College Committee on Academic Affairs met on March 25, 2026 and reviewed this proposal. A vote was taken and the request was unanimously approved. A College-level record of support for this proposal was created.



Prof. Randy Smith
Vice Provost for Academic Programs

March 25, 2026

Dear Prof. Randy Smith,

We are writing to request that the CAA consider the proposed changes to the curriculum for the Department of Materials Science and Engineering (MSE), specifically its MSE program, outlined in detail below. The proposed changes were discussed in a series of faculty meetings going back to the fall of 2024. A final proposal was developed by the MSE curriculum committee in Aug of 2025. It was presented to the faulty of MSE on 8/25/2025 at the yearly faculty retreat, at which point it was approved. Please let us know if you have any questions or need any additional information.

Sincerely,

Mike Sumption
Professor & MSE Undergrad Studies Chair
Department of Materials Science and Engineering
The Ohio State University

Proposal for modifying the MSE curriculum (3/25/26):

We propose the following changes to the MSE undergraduate curriculum, in three sections

Section I

(1) Replace the presently required "two semesters of Chemistry" (CHEM1250+3210 or 1210+1220 or 1250 + 1220) with Chem 1250 (Rationale: 1250 has been revamped and improved, it is sufficient for MSE, most other engineering departments allow 1250)
(2) Replace Math 2177 with Math 2173 and 2174 (rationale: Student presently struggle with Math in MSE, 2177 is a high density class, 2173 and 2174 cover similar topics but deeper)

Section II

(3) Presently, 6 hours of technical electives are required, these TE may be any graded course in Engineering, Math, Biological, or Physical Sciences focusing on technical content and numbered 3000 or higher, with certain allowed exceptions to the 3000 rule, including but not limited to ECE 2300 (Electrical Cir and Elect Devices); Chem 2310 or 2510 (Organic Chemistry), BIOLOGY 1113 (Biological Sci – Energy Transfer and Development). We propose to modify this allow ENGR 4375 as one of the 6 credits.

Section III

(4) Presently MSE has a Jr level materials modelling simulation lab (MATSENG 3321) and two Jr level physical materials labs. This would be replaced with two combined classes 3335 and 3336 combining modelling and physical labs. Presently, 3321, 3331, and 3332 are each 2 hours (for a total of 6 hours), the two classes replacing these would be 4 hours each. (Rationale: this is proposed in order to treat the physical and the computational aspects of materials at the same time. The goal is to add clarity through synergy and coordinated effort. In addition, 8 hours total will more accurately represent the time commitment in these classes).
(5) Delete the MechEng 2040 (rationale: MSE students only need introductory part of class, mostly strength of materials, covered in MSE 3261)
(6) Net change to our credit hour requirements: We go from 127 credit hours (present) to 123 credit hours (new proposed curriculum).

Informational Items: We are switching the timing of two classes in the curriculum; while not requiring college approval, it is useful to know when looking at present and expected year-by-year program layouts.

(1) We plan to move MATSENG 3271 (3 h) from its present location in the Spring of the Jr year to the fall of the Jr year (bringing it one semester earlier in the students curriculum). This would be balanced by moving a Technical Elective (3 h) from the fall of the Jr year to the spring of the senior year, and an MSE elective (3 h) from the spring of the Sr year to the spring of the Jr year. (Rationale: This moves a core course (MATSENG 3271) critical for electronic and ceramic materials earlier in the students curriculum, and allows electives in electronic materials or ceramic materials to build on this core class as well as one another. The placement of an MSE elective slot in the Jr year also allows structure in the elective sequences of polymer and biomaterials related MSE electives.

Effect of proposed change:

- Bolster our students in terms of their math preparation. Presently, some of our students struggle with mathematical concepts in the MSE curriculum, particularly in the area of differential equations. By replacing Math 2177, which is a covers a large number of topics rapidly (Multiple integrals, line integrals; matrix algebra; linear (ordinary and partial) differential Equations), with a series 2173 (Multiple integrals, line integrals, and second order differential equations) and 2174 (Matrix theory, eigenvectors and eigenvalues, ordinary and partial differential equations), we expect that this difficulty can be removed. We also intend to allow 2177 and 2174 as an acceptable alternative.
- As variants of first year math classes (1151 and 1172) are being developed, alternative first year OSU math sequences that are intended as variants of 1151/1172, add to 10 credit hours, and fulfil the pre-requisites of 2173 and 2174 will be acceptable.
- Align our chemistry requirement to match the majority of engineering departments, moving from "two semesters of Chemistry" (CHEM1250+3210 or 1210+1220 or 1250 + 1220) to Chem 1250 (the recent revision of 1250 has improved this class and should be sufficient for MSE students).
- Allow alternative pathways into MSE. For students who may transfer from other departments, the requirement of Math 2173/2174 and Chem 1250 is more common and so should allow for easier transfer
- Reduce required hours by minimizing overlap and focusing on core MSE topics by no longer require Mech Eng 2040 (Statics and Introduction to Mechanics of Materials). While aspects of this course are good, only a fraction are MSE-related, and those (Young's modulus, strength of materials) are covered adequately in MATSENG 3261 Introduction to the Mechanical Behavior of Materials. This course will be allowed as a TE, and encouraged for students concentrating in metals.
- Increase curriculum coherence by combining physical and computational labs. In doing so, topics explored computationally will no longer divorced from physical lab explorations of the same and related topics. This will also encourage a melding of computational and physical approaches to explore materials processing and properties.
- Allow more in depth studies in electronic materials and ceramic (electro-ceramic) materials by moving MATSENG 3271 from the spring of the Jr year to the fall of the Jr year (moving it forward in the curriculum one semester). This will allow the development of sequences of spring Jr year electives and Sr year electives that build off of one another and allow deeper exploration of key concepts and subsequently application. In this regard, it is anticipated that one additional electronic materials class ("Electronic Materials II, proposed MATSENG 3272", with MATSENG 3271 as a pre-req) will be developed, intended for the spring of the Jr year, and offered as an elective, with all other elective classes in electronic materials and electronic (functional) ceramic materials requiring it.
- Allow more in-depth studies in in all MSE specialties by introducing a "structured elective" in the Jr year spring. This will be fulfilled in some cases (some focus areas) by existing courses, for the electronic materials focus by the proposed MATSENG 3272.
- Allow an earlier pathway into semiconductors and any of the new semiconductor certificates, as part of the response to the new Intel infrastructure.

- A secondary effect will be to smooth out the hours per semester, see below in the listing of the hours per semester.
- We still satisfy the ABET requirements for math/science of at least 30 semester credit hours (or equivalent) of college-level mathematics and basic sciences, including physics and chemistry with laboratory experience. We would have 30 credit hours (down from 32 credit hours) – see below for the list of courses.

List of courses for ABET Math and Science Requirement (30 hours total): Chem 1250 (4 credit hours), Math 1151, 1172 (10 credit hours), Math 2173 (3 credit hours), Match 2174 (3 credit hours), Physics 1250 (5 credit hours), Physics 1251 (5 credit hours)

Please see below for the changes to the program's curriculum sheet.

THE OHIO STATE UNIVERSITY

Effective Term: Autumn 2025 (proposed changes)

Bachelor of Science
Major: Materials Science and Engineering

Students in this major will complete a minimum of ~~127~~ 123 hours outlined as follows.

General Education Requirements		
Requirement	**Course Options**	**Hours**
GE Launch Seminar	~~GAA(AI)~~1201	1
Foundations: Writing and Information Literacy [a]	***Student Choice***	3
Foundations: Mathematical & Quantitative Reasoning/Data Analysis [a]	***Math 1151****	Overlap w/ College requirement
Foundations: Literary, Visual and Performing Arts [a]	***Student Choice***	3
Foundations: Historical & Cultural Studies [a]	***Student Choice***	3
Foundations: Natural Science [a]	***Physics 1250****	Overlap w/ College requirement
Foundations: Social & Behavioral Sciences [a]	***Student Choice***	3
Foundations: Race, Ethnic and Gender Diversity [a]	***Student Choice***	3
Theme: **Citizenship for a Diverse & Just World** [b]	***Student Choice***	4
Theme: **Student Choice** [b]	***Student Choice***	4
GE Reflection	**Capstone**	Embedded in core curriculum capstone
	General Education Credit Hours:	**24**

College/Degree Requirements [a,b]		
Requirement	**Course Options**	**Hours**
Math 1151*, 1172*, (Math & Quantitative Reasoning / Data Analysis)		10
Physics 1250* (Nat Sci)		5
ENGR 1181.0x, 1182.0x		4
ENGR 1100.01		1
	Credit Hours:	**20**

Major Coursework [a,b]		
Course	**Title**	**Hours**
Major Core		
MATSENG 2010	Introduction to Engineering Materials	3
MATSENG 2241	Structure and Characterization	3
MATSENG 2331	Structure and Characterization lab	2
MATSENG 2251	Materials Thermodynamics	3
MATSENG 2321	Modelling and Simulation I	3
MATSENG 3141	Structural Transformations	3
MATSENG 3151	Transport and Kinetics	3
~~MATSENG 3234~~	~~Materials Lab I~~	~~2~~
MATSENG 3261	Mechanical Behavior Mat	3
MATSENG 3271	Electronic Materials	3
~~MATSENG 3321~~	~~Modelling and Simulation II~~	~~3~~
~~MATSENG 3232~~	~~Materials Lab II~~	~~2~~
MATSENG 3335	Materials and Comp Lab I	4
MATSENG 3336	Materials and Comp Lab 3336	4
MATSENG 4181	Materials Selection	2
MATSENG 5XXX	MSE Electives	15
MATSENG 5XXX	MSE Sr lab	1
MATSENG 4381	Capstone Design I	3
MATSENG 4382	Capstone Design II	3
Required Non-Major Courses		
~~First Chem* (Nat Sci)~~	~~General Chemistry for Engineers~~	~~#0~~
Chem 1250	General Chemistry for Engineers	4
~~MECHENG 3040~~	~~Stats and Mech~~	~~#0~~
~~MATH * 2177 (Maths & Quantitative Reasoning / Data Analysis)~~	~~Ord and Partial Diff Eq~~	~~#0~~
MATH 2173	Engineering Mathematics B	3
MATH 2174	Linear Algebra and Differential Equations for Engineers	3
~~Second Chem~~		~~#0~~
PHYSICS 1251* (Nat Sci)	E&M, Waves, Optics, Modern Physics	5
Required Technical / Directed / Targeted Electives; Career Courses		
Technical Electives		6
	Credit Hours:	~~**33-79**~~

General Education	24
Required Non-Major Courses	~~31~~(15)
College/Degree Requirements	20
Major Core	~~58~~(55)
Technical Electives etc	6
Minimum Total Credit Hours	~~127~~ (123)

Total credits: ~~127~~ 123

Curriculum by semester, present and proposed

Year	Autumn	Spring
1	___ ENGR 1100 *(Engineering Survey)* ..... 1 hr ___ ENGR 1181 *(Fundamentals of Engr 1)* ..... 2 hr ___ MATH 1151 *(Calculus 1)* ..... 5 hr ___ PHYSICS 1250 *(Mechanics, Thermal, Waves)* ..... 5 hr ___ General Education Launch ..... 1 hr	___ ENGR 1182 *(Fundamentals of Engr 2)* ..... 2 hr ___ MATH 1172 *(Engineering Math A)* ..... 5 hr ___ First Chemistry*(See options below) 4-5 hr ___ General Education ..... 3 hr ___ General Education ..... 3 hr
2	___ MATSCEN 2010 *(Intro to Engr Materials)* ..... 3 hr ___ MATH 2177 *(Ord & Part Diff Eq)* ..... 4 hr ___ PHYSICS 1251 *(E&M, Optics, Modern Phys)* ..... 5 hr ___ Second Chemistry*(See options below) ..... 4-5 hr	___ **MATSCEN 2241** *(Struc & Characterization)* ..... 3 hr ___ **MATSCEN 2331** *(Struc & Char Lab)* ..... 2 hr ___ **MATSCEN 2251** *(Materials & Thermo)* ..... 3 hr ___ **MATSCEN 2321** *(Modeling & Sim 1)* ..... 3 hr ___ General Education Theme ..... 4 hr
3	___ MECHENG 2040 *(Statics & Mechanics)* ..... 4 hr ___ **MATSCEN 3141** *(Struc Transformations)* ..... 3 hr ___ **MATSCEN 3151** *(Transport & Kinetics)* ..... 3 hr ___ **MATSCEN 3331** *(Materials Lab 1)* ..... 2 hr ___ Technical Elective *(see TE notes)* ..... 3 hr ___ General Education ..... 3 hr	___ **MATSCEN 3261** *(Mechanical Behav of Mats)* ..... 3 hr ___ **MATSCEN 3271** *(Electronic Materials)* ..... 3 hr ___ **MATSCEN 3321** *(Modeling & Sim 2)* ..... 2 hr ___ **MATSCEN 3332** *(Materials Lab 2)* ..... 2 hr ___ Technical Elective *(see TE notes)* ..... 3 hr ___ General Education ..... 3 hr
4	___ **MATSCEN 4181** *(Materials Selection)* ..... 2 hr ___ MATSCEN 4381 *(Senior Design 1)* ..... 3 hr ___ MATSCEN Elective ..... 3 hr ___ MATSCEN Elective ..... 3 hr ___ **MATSCEN Elective Lab** ..... 1 hr ___ General Education Theme ..... 4 hr	___ MATSCEN 4382 *(Senior Design 2)* ..... 3 hr ___ MATSCEN Elective ..... 3 hr ___ MATSCEN Elective ..... 3 hr ___ MATSCEN Elective ..... 3 hr ___ General Education ..... 3 hr

Total Hours to complete the degree program = 127

Year	Autumn	Spring
1	___ ENGR 1100 *(Engineering Survey)* ..... 1 hr ___ ENGR 1181 *(Fundamentals of Engr 1)* ..... 2 hr ___ MATH 1151 *(Calculus 1)* ..... 5 hr ___ PHYSICS 1250 *(Mechanics, Thermal, Waves)* ..... 5 hr ___ Gen Ed Launch Seminar----------1 hr 14 hr	___ ENGR 1182 *(Fundamentals of Engr 2)* ..... 2 hr ___ MATH 1172 *(Engineering Math A)* ..... 5 hr ___ CHEM 1250 ..... 4 hr ___ Gen ed ..... 3 hr ___ Gen Ed……..……3 hr 17 hr
2	___ MATSCEN 2010 *(Intro to Engr Materials)* ..... 3 hr ___ MATH 2173 *(Eng Math B 3 D Int and ODE)* ..... 3 hr ___ PHYSICS 1251 *(E&M, Optics, Modern Phys)* ..... 5 hr ___ Gen Ed ..... 3 hr 14 hr	___ **MATSCEN 2241** *(Struc & Characterization)* ..... 3 hr ___ **MATSCEN 2331** *(Struc & Char Lab)* ..... 2 hr ___ **MATSCEN 2251** *(Materials & Thermo)* ..... 3 hr ___ **MATSCEN 2321** *(Modeling & Sim 1)* ..... 3 hr ___ MATH 2174 *(Matrix Algebra and PDE)* ..... 3 hr 14 hr
3	___ **MATSCEN 3141** *(Struc Transformations)* ..... 3 hr ___ **MATSCEN 3151** *(Transport & Kinetics)* ..... 3 hr ___ **MATSCEN 3335** *(Lab+mod Sim A)* ..... 4 hr ___ **MATSCEN 3271** *(Electronic Materials)* ..... 3 hr ___ Gen Ed Theme ..... 4 hr 17 h	___ **MATSCEN 3261** *(Mechanical Behav of Mats)* ..... 3 hr ___ **MATSCEN 3336** *(Lab +Mod Sim B)* ..... 4 hr ___ Technical Elective (see TE notes) ..... 3 hr ___ MATSCEN 4(5)xxx Structured Elective* ..... 3 hr ___ Gen ed ..... 3 hr 16 h
4	___ **MATSCEN 4181** *(Materials Selection)* ..... 2 hr ___ MATSCEN 4381 *(Senior Design 1)* ..... 3 hr ___ MATSCEN 5xxx Elective ..... 3 hr ___ **MATSCEN 5xxx Elecective ..... 3 hr** ___ **MATSENT 5xxx Elective lab……..1 hr** ___ General Ed Theme ..... 4 hr 16 hr	___ MATSCEN 4382 *(Senior Design 2)* ..... 3 hr ___ MATSCEN 5xxx Elective ..... 3 hr ___ MATSCEN 5xxx Elective ..... 3 hr ___ Technical Elective (see TE notes) ..... 3 hr ___ Gen Ed ..... 3 hr 15 hr

Number of hours per semester present (proposed)

	Fall	Spring
1	14 (14)	17 (17)
2	17 (14)	15 (14)
3	18 (17)	16 (16)
4	16 (16)	15 (15)

Plan for implementation and informing the students of curriculum changes:

This curriculum revision has three sections (Section I) the change in Freshman and sophomore year math and chemistry requirements, (Section II) modest changes (clarifications and expansions) in the Technical Electives requirements, and (Section III) changes in the Jr and Sr year: the merging of MATSENG 3331, 3332 (physical labs I and II), and 3321 (modelling and simulation) into 3335 and 3336 (Physical and Computational Labs I and II). We also note (informationally) that we intend to move MATSENG 3271 (Electronic Materials) from the spring of the Jr year to the fall, switching its place with a technical elective. We plan to implement this as follows:

1. All students entering the program from the fall of 2026 on will fall under the new curriculum requirements as described above, including those of Sections I-III (all of them).
2. All students presently in the program (as of Spring of 2026) will have the option to complete their program using the math and chemistry requirements from the current curriculum.
3. All students graduating fall of 2026 or later will have the option to use the slightly modified version of the TEs as described in Section II. Since this is an expansion of the allowed courses, this can be applied to all students graduating fall of 2026 or later without inconvenience to any student.
4. Section III changes will be implemented in the fall of 2027; thus Section III changes (merging of 3331, 3332, and 3321 to form 3335 and 3336, as well as the dropping of 2041) will apply to all students who have not yet taken all of 3331, 3332, and 3321 as of fall of 2027. Those who have already taken the Jr year sequence (seniors as of fall ‘26) will finish under the present curriculum.

Listed below are the different scenarios:

Scenario 1: Student starts as an MSE major in the fall of 2026:

- They fall wholly under the new curriculum (Sections I, II, and III)

Scenario 2: Student was an MSE major as of spring of 2026, but has not yet taken MATSENG 3331, 3332, and 3321

- They can use present math and chemistry sequences, or they can use new math and chemistry sequences
- They must use new Jr and Sr year sequences (3335 and 3336)

Scenario 3: Student will be a senior in fall of 2026 and have taken the 3271, 3331, 3332, and 3321

- The student falls wholly under the present curriculum

	Section I	Section II	Section III	
Students joining MSE in fall of 2026	X	X (option)	X	Fully new curriculum
Students who have not yet had 3331, 3332, and 3321 by fall of ‘27		X (option)	X	Section II and III parts of new curriculum
Students who have already had 3331, 3332, and 3321 by fall of ’27, but will not graduate until fall ’26 or later		X (option)		Present curriculum with expanded option for TEs