

# Degree Schedule – Graduate Certificate in Fundamentals of Materials Engineering

Due one semester prior to completing certificate requirements.

This is a 10-credit certificate.

**Students:** Complete the form in Microsoft Word and email the docx file to your [graduate program director or assistant.](https://www.mtu.edu/gradschool/prospective/directors/#certificate)

**Graduate program:** Review the information provided, indicate your approval as noted, and [submit to the Graduate School](https://sites.google.com/mtu.edu/grad-school-form-submission/home) online. (link only accessible to Graduate Program staff)

The certificate in Fundamentals of Materials Engineering is a ten-credit (10 Cr Total) program of one required course and three electives designed to provide a basic understanding of the physical principles required to apply the Processing-Structure-Properties-Performance paradigm of the MSE discipline. The program of study provides a basic understanding of the concepts required to analyze, design and control the development and optimization of new and emerging materials for current or emerging applications. Recipients of this certificate will be able to apply thermodynamic and kinetic principles to design the materials chemistry and the manufacturing processes required to develop specific material microstructures and functionalities. The certificate will be offered on campus and fully on-line.

## Student Information

Complete the information requested below.

Name Last or Family Name, First Name or FNU

M-Number (M12345678) M

Your name will be printed on your certificate as it appears in our University records with either your legal or preferred first name. Please choose how you would like your name to appear on your certificate and type it in full. Students may contact the [Registrar’s Office](https://www.mtu.edu/registrar/students/information/preferred-name/) to change their preferred name; employees may contact Human Resources.

Selection for name Choose an item.

Typed name Name as it should appear on certificate

## Certificate Mailing Information

Your certificate will be mailed approximately six to eight weeks after the semester that all requirements have been met to the person and address that you provide below. If you request mailing to an address that you do not reside at, please indicate “in care of” and the name of the person living at the address. Please note that this will not update your regular mailing address at the University.

Mailing address Enter name and address of the person to mail your certificate

## Accelerated Certificates

Certificate programs may allow up to three (3) credits earned while an undergraduate at Michigan Tech to be used to fulfill the requirements of their bachelor’s degree and graduate certificate. To earn an accelerated certificate, students must:

* [apply for admission](https://www.mtu.edu/gradschool/prospective/apply-now/) to the certificate program following current procedures,
* follow all current policies regarding the reuse of credits, and
* mark the accelerated class(es) with “AC” in the “Semester and Year Taken” column in the tables below.

## Required Coursework (1 Credit)

In the table below, mark the classes taken for the certificate with the semester the credits were earned.

| Semester and Year Taken | Course Number | Course Title | Number of Credits |
| --- | --- | --- | --- |
| Semester | MSE 5970 | Special Topics - Graduate Materials Science and Engineering  Topic: Perspectives on Computational Materials Science | 1 |

## Elective Coursework (9 Credits)

In the table below, mark the classes taken for the certificate with the semester the credits were earned.

| Semester and Year Taken | Course Number | Course Title | Number of Credits |
| --- | --- | --- | --- |
| Semester | MSE 5110 | Thermodynamics and Kinetics I | 3 |
| Semester | MSE 5120 | Thermodynamics and Kinetics II | 3 |
| Semester | MSE 5130 | Crystallography & Diffraction | 3 |
| Semester | MSE 5140 | Mechanical Behavior of Materials | 3 |

## Coursework Substitutions

Fully complete the table with the information requested. Include any courses for the certificate that are not named in the above tables. Approval of courses not listed above is at the discretion of the program granting the certificate.

| Semester and Year Taken | Course Number  ex: CH5555 | Course Title  Include the course number (as listed above) of the substitution and a brief rationale.  The table will expand to fit your text. | Number of Credits |
| --- | --- | --- | --- |
| Semester | Course Number | Course number of substitution, and rationale | Credits |
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| Semester | Course Number | Course number of substitution, and rationale | Credits |
| Semester | Course Number | Course number of substitution, and rationale | Credits |

## Approvals

**Graduate program**: indicate your approval by typing your name below (if possible). Uploading the form to the Graduate School indicates your approval even if the form fields are not available. The Graduate School approves the form after receipt and verification.

Type name of approver

Department Chair, Material Science and Engineering OR Graduate Program Director, Date

Materials Science and Engineering

**Graduate School Use Only:** Total Credits:

AS  ACC  RCR  SFAREGS, SHADEGR, SHADIPL, SZAGDGR