

# Degree Schedule – Graduate Certificate in Advanced Electric Power Engineering

Due one semester prior to completing certificate requirements.

**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)

It is expected that students beginning this certificate have a working understanding of electric power system analysis equivalent to that gained in EE4221. Please check the undergraduate course descriptions of EE4221 for details. Students must earn grade of B or higher in each of the courses counting toward the certificate. This is a 15-credit certificate. A minimum of 10 credits must be earned from Michigan Tech.

## 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 (3 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 | EE 5200 | Advanced Methods in Power Systems | 3 |

## Elective Coursework (12 credits, no more than 3 credits below 5000)

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 | EE 4219 | Intro. to Electric Machinery and Drives | 3 |
| Semester | EE 4222 | Power System Analysis 2 | 3 |
| Semester | EE 4227 | Power Electronics | 3 |
| Semester | EE/MEEM 4295 | Intro to Propulsion Systems for Hybrid Electric Vehicles | 3 |
| Semester | EE 5220 | Transient Analysis Methods | 3 |
| Semester | EE 5221 | Advanced Electric Machines | 3 |
| Semester | EE 5223 | Power System Protection | 3 |
| Semester | EE 5227 | Advanced Power Electronics | 3 |
| Semester | EE 5230 | Power System Operations | 3 |
| Semester | EE 5231 | Energy Center Applications | 3 |
| Semester | EE 5232 | Power System Optimization | 3 |
| Semester | EE 5240 | Computer Modeling of Power Systems | 3 |
| Semester | EE 5250 | Distribution Engineering | 3 |
| Semester | EE 5251 | Distribution Engineering II | 3 |
| Semester | EE 5260 | Wind Power | 3 |
| Semester | EE 5275 | Energy Storage Systems | 3 |
| Semester | EE 5290 | Selected Topics in Power Systems | 3 |
| Semester | EE/MEEM 5295 | Advanced Propulsion Systems for Hybrid Electric Vehicles | 3 |
| Semester | EE 5455/ MEEM 5300 | Cyber Security of Industrial Control Systems | 3 |
| Semester | EE/MSE 5490 | Solar Photovoltaic Science and Engineering | 3 |
| Semester | EE 6210 | Power System Dynamics and Stability | 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 |

Graduate School Use Only: Total 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 of Electrical & Computer Engineering OR

Graduate Program Director of Advanced Electric Power Engineering Certificate

Graduate School Approval Date