POWER CONVERSION AND CONTROL, CAPSTONE CERTIFICATE

The Power Conversion and Control Capstone Certificate (https://epd.wisc.edu/online-degree/power-conversion-and-power-controls-certificate/?_ga=1.169457889.1391686154.1484336426/#/courseanddegreeplan) addresses the learning goals of practicing engineers by providing further study with senior, highly respected faculty in the UW-Madison College of Engineering. It provides engineers with an opportunity for gaining more specialized expertise, including more technical knowledge of power electronics, drives, and controls. The certificate also provides a “stepping stone” for students wishing to apply for admission the university’s online Master of Science: Electrical Engineering (Power Engineering) or Master of Science: Mechanical Engineering (Controls) degree programs.

The certificate was developed in response to needs identified by more than 80 corporate sponsors of the renowned Wisconsin Electric Machines and Power Electronics Consortium (WEMPEC) (http://www.wempec.wisc.edu).

The format of the Power Conversion and Controls Capstone Certificate is completely online to accommodate working professionals. The 9-credit capstone certificate was designed for completion in three consecutive terms of 3 credits per term. Or, students may complete it in two terms by taking two courses in a semester. (Basic courses in electro-mechanical energy conversion ECE 355 Electromechanical Energy Conversion) and electronic switching circuits or demonstrated knowledge in these areas are recommended as prerequisites.)

Further details, including current tuition and costs, is provided on the program's website (https://epd.wisc.edu/online-degree/power-conversion-and-power-controls-certificate/?_ga=1.169457889.1391686154.1484336426/#/courseanddegreeplan) or by contacting the department:

DEPARTMENT OF ENGINEERING PROFESSIONAL DEVELOPMENT
432 North Lake Street
Madison, WI 53706
800-462-9876

collegeofengineeringonlineadmissions@wisc.edu

HOW TO GET IN

APPLICANT REQUIREMENTS

Exceptions to standard admission requirements are considered by the admissions committee on an individual basis.

- A B.S. degree from a program accredited by the Accreditation Board for Engineering and Technology (ABET) or the equivalent.*
- A minimum undergraduate grade-point average (GPA) of 3.00 on the equivalent of the last 60 semester hours (approximately two years of work) or a master's degree with a minimum cumulative GPA of 3.00. Applicants from an international institution must have a strong academic performance comparable to a 3.00 for an undergraduate or master's degree. All GPAs are based on a 4.00 scale.
- Applicants whose native language is not English must provide scores from the Test of English as a Foreign Language (TOEFL). The minimum acceptable score on the TOEFL is 580 on the written version, 243 on the computer version, or 92 on the Internet version.

*Equivalency to an ABET accredited program: Applicants who do not have bachelor's degree from an ABET accredited program may also qualify for admission to the program. Such applicants must have a B.S. in science, technology, or a related field with sufficient coursework and professional experience to demonstrate proficiency in engineering practice. Registration as a professional engineer by examination, if achieved, should be documented to support your application.

ADMISSION

Applications are accepted for admission for all three terms (fall, spring, and summer) - but have admission deadlines that must be met. The admissions process has been designed to conduct a holistic review of likely success in the program. Decisions are based on academic and professional background. See the program's website for current dates and information regarding selection of students. (https://epd.wisc.edu/online-degree/power-conversion-and-power-controls-certificate/?_ga=1.90871258.1391686154.1484336426/#/admission)

Note: Adult Career and Special Student Services (ACCSS) is the admitting office for all University Special students. However, the department offering the Capstone Certificate program makes the final admission decision upon review of all applicant materials.

APPLICATION STEPS

1. Email the Chair of the Admissions Committee (daryl.haessig@wisc.edu) in the department to state an intent to apply to the power conversion program. Indicate if you intend to apply to a degree program upon successful completion of the capstone certificate. Attach a current resume or CV to the Intent to Apply email. Current chair: daryl.haessig@wisc.edu

   Your resume/CV should include at least:
   - Educational history (including GPA, awards and honors received).
   - Professional work experience (including specific details on your engineering experience, technical training, and responsibilities).
   - Listing of professional association memberships, advanced training (such as a PE license) and other noteworthy, engineering-related details.

2. Submit an online application for admission (http://continuingstudies.wisc.edu/advising/apply.htm) as a University Special student, selecting UNCS Capstone Certificate and the program: Power Conversion and Control. This application is received and processed by ACSSS with final decision held for approval from the specific capstone certificate coordinator.

3. Following steps outlined by the program (https://epd.wisc.edu/online-degree/power-conversion-and-power-controls-certificate/?_ga=1.90871258.1391686154.1484336426/#/apply), request transcripts of all previous college work and two letters of recommendations are sent to the department as follows:

   College of Engineering Online Admissions Office
   Attention: Daryl Haessig
   432 North Lake Street, Room 8715
Madison, WI 53706

For pdf’s, use the following email address: daryl.haessig@wisc.edu

For the two (2) letters of recommendation, use the Download Recommendation Form. The recommenders should send the statement directly to the program coordinator. At least one letter should be from your current or previous direct supervisor. Academic references are acceptable for applicants who have been out of school less than five years.

4. Complete a phone interview.

The admissions committee chair will schedule a phone interview with candidates after all application materials are received. Once completed, the application will be presented to the Admissions Committee for evaluation at the next scheduled meeting.

5. Notification of admissions decision

Admission decisions are made on applications in the order received.

The committee will make one of the following decisions:

• Recommend admission
• Defer consideration until the regular consideration review meeting.
• Request additional information before evaluating further.
• Decline further consideration of your application.

ENROLLMENT

After a decision has been made, the admissions committee chair contacts applicants by email to inform of the decision and to schedule a time to discuss the decision and next steps.

Admitted students receive a formal letter of admission to UW–Madison from Adult Career and Special Student Services along with general enrollment information. Additional detail is provided on the ACSSS enrollment page (http://continuingstudies.wisc.edu/advising/enroll-special.htm).

LEARNING OUTCOMES

Students will

• Apply concepts of the latest innovations in power electronics, electric machines, electric drives, and automatic controls
• Articulate the key performance objectives of a controlled electric drive system
• Analyze the performance metrics of an electric machine-driven or power-driven system
• Complete the preliminary designs of automatic controlled systems using power electronic circuits

REQUIREMENTS

• Must have a minimum GPA of 2.000

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>E C E 355</td>
<td>Electromechanical Energy Conversion</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>E C E 411</td>
<td>Introduction to Electric Drive Systems</td>
<td>3</td>
</tr>
<tr>
<td>E C E 412</td>
<td>Power Electronic Circuits</td>
<td>3</td>
</tr>
<tr>
<td>M E 446</td>
<td>Automatic Controls</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 9