SYSTEMS ENGINEERING
GRADUATE CREDIT CERTIFICATE PROGRAM

Person-in-Charge: Colin Neill
Program Code: SYSENG
Campus(es): Great Valley

The goal of this graduate certificate program is to prepare students to apply systems engineering principles across the product development or acquisition lifecycle.

Effective Semester: Fall 2018
Expiration Semester: Fall 2023

Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (http://gradschool.psu.edu/prospective-students/how-to-apply/). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (http://gradschool.psu.edu/graduate-education-policies/). International applicants may be required to satisfy an English proficiency requirement; see GCAC-305 Admission Requirements for International Students (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-305/admission-requirements-international-students/) for more information.

The successful applicant will possess a degree in science or engineering or a closely aligned field and is generally expected to have a minimum combined junior/senior grade-point average of 3.0 (B) on a 4.0 scale.

Certificate Requirements

Requirements listed here are in addition to requirements listed in Graduate Council policy GCAC-212 Postbaccalaureate Credit Certificate Programs (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-212-postbaccalaureate-credit-certificate-programs/).

To be awarded the Graduate Certificate in Systems Engineering, students must successfully complete 12 credits of course work. All courses must be completed with a grade of C or better and a grade-point average of 3.0 to be awarded the certificate.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSEN 520</td>
<td>Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SYSEN 522</td>
<td>Systems Verification Validation &amp; Testing</td>
<td>3</td>
</tr>
<tr>
<td>SWENG 586</td>
<td>Requirements Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
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<td></td>
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<tr>
<td></td>
<td>Select 3 credits from the following:</td>
<td>3</td>
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<tr>
<td>SYSEN 530</td>
<td>Systems Optimization</td>
<td></td>
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<tr>
<td>SYSEN 531</td>
<td>Probability Models and Simulation</td>
<td></td>
</tr>
<tr>
<td>SYSEN 533</td>
<td>Deterministic Models and Simulation</td>
<td></td>
</tr>
<tr>
<td>SYSEN 536</td>
<td>Decision and Risk Analysis in Engineering</td>
<td></td>
</tr>
<tr>
<td>SYSEN 550</td>
<td>Creativity and Problem Solving I</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

Learning Outcomes

Students will be able to:

1. Develop heterogeneous engineered solutions to complex problems using contemporary methods, processes, and tools.
2. Understand system interdependencies and the ability to analyze the associated trade spaces these generate to identify optimal solution alternatives.
3. Graduates will be able to effectively communicate their ideas within their organization, to other practicing professionals and the general public.

Contact

Campus: Great Valley
Graduate Program Head: Colin Neill
Director of Graduate Studies (DGS) or Professor-in-Charge (PIC): Nil Hande Ergin
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Program Website
View (http://greatvalley.psu.edu/academics/graduate-certificates/systems-engineering/)