Required Courses
The following courses are required for the Ph. D degree in Systems.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>SYSEN 6000</td>
<td>Foundation of Complex Systems</td>
<td>(Fall, 3 credits)</td>
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<tr>
<td>SYSEN 6150</td>
<td>Model-based Systems Engineering</td>
<td>(Fall, 3 credits)</td>
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<tr>
<td>SYSEN 8000</td>
<td>Systems Doctoral Colloquium</td>
<td>(Fall, 1 credit)</td>
</tr>
<tr>
<td>SYSEN 8100</td>
<td>Systems Seminar Series</td>
<td>(Fall/Spring 1 credit)</td>
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Total credits for required courses 9 credits

Elective Courses
Students are expected to take courses in Risk Modeling, Human Centered Modeling, Systems Design and/or Systems Science

Minors
Students are expected to select two minors in coordination with special committee members.

Student Progress Review (SPR): Cornell Graduate School
The Student Progress Review (SPR) requirement was implemented in 2017 at the request of students and faculty to support the regular exchange of constructive, written feedback between advisees and advisors. It codifies a process for research degree students and their special committees to have at least one formal conversation per year about academic progress and future plans. Using the SPR form, students are asked to reflect on their recent accomplishments, identify challenges, and set goals. Advisors then review their students' SPR forms and enter constructive feedback and an overall rating of student progress. Feedback that is documented on the SPR will be made available to the student, all members of the student’s special committee, and the DGS/GFA of the student’s field. To confirm, The Systems field has elected to have **doctoral students in the 2nd year and beyond**, complete the Standard Form. The SPR will be completed in the fall semester between September 1 and November 1.

Q Exam
The Q exam is taken between August and January of Year two. Students must have a minimum grade in SYSEN 6000 & 6150, “B”. An oral presentation about research followed by Q&A. Questions about material in SYSEN 6000 & 6150 as applicable to the research presented.

A-Exam
The A-Exam must be scheduled before the beginning of the seventh semester unless a special petition is filed. The A-Exam should be scheduled well in advance of the exam and the appropriate form (Schedule of Examination form) MUST be submitted to the Graduate School at least seven (7) calendar days ahead. After the A-Exam, the Committee Chair must check the
relevant box on the Results of Examination Form. The form must be turned into the Graduate School within three (3) days after the exam.

**B-Exam**
The B-Exam (thesis defense) is scheduled with the same form as the A-Exam and must be submitted to the Grad School at least seven (7) calendar days ahead.