10KS3846PHD: SYSTEMS & ENTREPRENEURIAL ENGINEERING, PHD

In Workflow
1. U Program Review (dforgacs@illinois.edu; eastuby@illinois.edu; aledward@illinois.edu)
2. 1422 Head (thurston@illinois.edu; hcraddoc@illinois.edu; lredman@illinois.edu)
3. KP Committee Chair (mch@illinois.edu; bsnewell@illinois.edu; danko@illinois.edu; kcp@illinois.edu)
4. KP Dean (candyd@illinois.edu)
5. University Librarian (jpwilkin@illinois.edu)
6. Grad_College (agrindly@illinois.edu; jch@illinois.edu; lowry@illinois.edu)
7. Provost (kmartens@illinois.edu)
8. Senate EPC (bjlehman@illinois.edu; moorhouz@illinois.edu; kmartens@illinois.edu)
9. Senate (jtempel@illinois.edu)
10. U Senate Conf (none)
11. Board of Trustees (none)
12. IBHE (none)
13. DMI (eastuby@illinois.edu; aledward@illinois.edu; dforgacs@illinois.edu)

Approval Path
1. Mon, 12 Oct 2020 16:05:58 GMT
   Deb Forgacs (dforgacs): Approved for U Program Review
2. Thu, 15 Oct 2020 19:07:46 GMT
   Deborah Thurston (thurston): Approved for 1422 Head
3. Tue, 17 Nov 2020 19:29:13 GMT
   Keri Pipkins (kcp): Approved for KP Committee Chair
4. Tue, 17 Nov 2020 20:59:31 GMT
   Candy Deaville (candyd): Approved for KP Dean
5. Tue, 17 Nov 2020 22:15:52 GMT
   John Wilkin (jpwilkin): Approved for University Librarian
6. Thu, 10 Dec 2020 20:05:32 GMT
   Allison McKinney (agrindly): Approved for Grad_College
7. Thu, 10 Dec 2020 20:39:49 GMT
   Kathy Martensen (kmartens): Approved for Provost

History
1. May 9, 2019 by Deb Forgacs (dforgacs)
2. Jul 1, 2019 by Mary Lowry (lowry)

Date Submitted: Mon, 12 Oct 2020 16:04:56 GMT

Viewing: 10KS3846PHD : Systems & Entrepreneurial Engineering, PhD
Changes proposed by: Lauren Redman

Proposal Type

Proposal Type:
Major (ex. Special Education)

This proposal is for a:
Revision
Proposal Title:

If this proposal is one piece of a multi-element change please include the other impacted programs here. Example: A BS revision with multiple concentration revisions

PhD revision with multiple minor revisions

The other programs that are tied to this revision include:
IE, MS -- key 337
IE, PHD -- key 336
SE, MS -- key 338

EP Control Number

EP.21.053

Official Program Name

Systems & Entrepreneurial Engineering, PhD

Effective Catalog Term

Fall 2021

Sponsor College

Grainger College of Engineering

Sponsor Department

Industrial and Enterprise Systems Engineering

Sponsor Name

Lauren Redman

Sponsor Email

lredman@illinois.edu

College Contact

Harry Dankowicz

College Contact Email

danko@illinois.edu
Program Description and Justification

Justification for proposal change:

The Department of Industrial and Enterprise Systems Engineering would like to align both the Industrial Engineering and Systems & Entrepreneurial Engineering curriculum requirements. This has no implication for students from a financial aspect and should make the requirements much more clear to avoid confusion that we currently experience.

In particular, we are proposing the following:

PhD With Approved Masters:
* Increase the number of SE courses (removing IE courses as option, unless approved)
* Decreasing the number of electives (due to increase of SE courses) and structuring the electives – STEM courses and open electives
* Defining the STEM courses that will count toward the degree

PhD With Approved Bachelors:
* Increasing the number of thesis hours required
* Increase the number of SE courses (removing IE courses as option, unless approved)
* Reducing the number of electives (due to increase of thesis) and structuring the electives – STEM courses and open electives
* Defining the STEM courses that will count toward the degree

Corresponding Degree

PhD Doctor of Philosophy

Is this program interdisciplinary?

No

Academic Level

Graduate

Will you admit to the concentration directly?

No

Is a concentration required for graduation?

No

CIP Code

142701 - Systems Engineering.

Is This a Teacher Certification Program?

No

Will specialized accreditation be sought for this program?

No
Admission Requirements

Is this revision a change to the admission status of the program?
No

Enrollment

Describe how this revision will impact enrollment and degrees awarded.
No impact in enrollment or degrees awarded is expected

Estimated Annual Number of Degrees Awarded

What is the matriculation term for this program?
Fall

What is the typical time to completion of this program?
5 years

What are the minimum Total Credit Hours required for this program?
64

Delivery Method

Is this program available on campus and online?
No

This program is available:
On Campus

Budget

Are there budgetary implications for this revision?
No

Will the program or revision require staffing (faculty, advisors, etc.) beyond what is currently available?
No
Resource Implications

Facilities

Will the program require new or additional facilities or significant improvements to already existing facilities?
No

Technology

Will the program need additional technology beyond what is currently available for the unit?
No

Non-Technical Resources

Will the program require additional supplies, services or equipment (non-technical)?
No

Resources

For each of these items, be sure to include in the response if the proposed new program or change will result in replacement of another program(s). If so, which program(s), what is the anticipated impact on faculty, students, and instructional resources? Please attach any letters of support/acknowledgement from faculty, students, and/or other impacted units as appropriate.

Faculty Resources

Library Resources

Instructional Resources

Will there be any reduction in other course offerings, programs or concentrations by your department as a result of this new program/proposed change?
No

Does the program include other courses/subjects impacted by the creation/revision of this program?
No
Financial Resources

How does the unit intend to financially support this proposal?
No financial impact is expected

Will the unit need to seek campus or other external resources?
No

Are you seeking a change in the tuition rate or differential for this program?
Yes

Is this program requesting self-supporting status?
No

Program Regulation and Assessment

Is the career/profession for graduates of this program regulated by the State of Illinois?
No

Program of Study

“Baccalaureate degree requires at least 120 semester credit hours or 180 quarter credit hours and at least 40 semester credit hours (60 quarter credit hours) in upper division courses” (source: https://www.ibhe.org/assets/files/PrivateAdminRules2017.pdf). For proposals for new bachelor’s degrees, if this minimum is not explicitly met by specifically-required 300- and/or 400-level courses, please provide information on how the upper-division hours requirement will be satisfied.

All proposals must attach the new or revised version of the Academic Catalog program of study entry. Contact your college office if you have questions.

Revised programs
PhDSEE ProposedChanges 101220.pdf

Attach a side-by-side comparison with the existing program AND, if the revision references or adds “chose-from” lists of courses students can select from to fulfill requirements, a listing of these courses, including the course rubric, number, title, and number of credit hours.

Catalog Page Text

Statement for Programs of Study Catalog
### Entering with approved M.S./M.A. degree

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 599</td>
<td>Thesis Research</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SE 590</td>
<td>Seminar (registration for 0 hours every term while in residence)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Approved SE and IE courses</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Elective courses – chosen in consultation with advisor (subject to Other Requirements and Conditions below)</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>400/500-level SE Courses</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>STEM courses from outside of major</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td><a href="#">STEM courses must be approved and be from a College of Engineering department, including ABE and CHBE (or other approved department). Excludes TEC and ENG courses.</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>64</td>
</tr>
</tbody>
</table>

**Other Requirements and Conditions (may overlap)**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Requirements and Conditions may overlap</td>
<td></td>
</tr>
<tr>
<td>Minimum 500-level credit hours applied toward the degree, all of which must from a College of Engineering department, including ABE and CHBE.</td>
<td>16</td>
</tr>
<tr>
<td>The Elective courses must be at the 500-level and from a College of Engineering department including ABE and CHBE.</td>
<td></td>
</tr>
<tr>
<td>A maximum of 8 hours of IE 597 (or other approved independent study) may be applied toward the elective course work requirement.</td>
<td></td>
</tr>
<tr>
<td>At least 64 hours of credit, which may include SE 599, must be earned in residence.</td>
<td></td>
</tr>
<tr>
<td>Minimum GPA: 3.25</td>
<td></td>
</tr>
<tr>
<td>Minimum 500-level credit hours applied toward the degree: 16</td>
<td></td>
</tr>
<tr>
<td>Independent study/project design do not count toward 500-level requirement.</td>
<td></td>
</tr>
<tr>
<td>A maximum of 8 credit hours of SE 594 (or other approved project design/ independent study) may be counted toward the degree.</td>
<td></td>
</tr>
<tr>
<td>Ph.D. exam and dissertation requirements:</td>
<td></td>
</tr>
<tr>
<td>Qualifying exam</td>
<td></td>
</tr>
<tr>
<td>Preliminary exam</td>
<td></td>
</tr>
<tr>
<td>Final exam or dissertation defense</td>
<td></td>
</tr>
<tr>
<td>Dissertation deposit</td>
<td></td>
</tr>
</tbody>
</table>

### Entering with approved B.S./B.A. degree

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 599</td>
<td>Thesis Research</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SE 590</td>
<td>Seminar (registration for 0 hours every term while in residence)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Approved SE and IE courses</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Elective courses – chosen in consultation with advisor (subject to Other Requirements and Conditions below)</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>400/500-level SE Courses</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>STEM courses from outside of major</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td><a href="#">STEM courses must be approved and be from a College of Engineering department, including ABE and CHBE (or other approved department). Excludes TEC and ENG courses.</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electives in consultation with advisor</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>96</td>
</tr>
</tbody>
</table>

**Other Requirements and Conditions (may overlap)**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Requirements and Conditions may overlap</td>
<td></td>
</tr>
<tr>
<td>Minimum 500-level credit hours applied toward the degree, all of which must from a College of Engineering department, including ABE and CHBE.</td>
<td>28</td>
</tr>
<tr>
<td>The Elective courses must be at the 500-level and from a College of Engineering department including ABE and CHBE.</td>
<td></td>
</tr>
</tbody>
</table>
A maximum of 8 hours of IE 597 (or other approved independent study) may be applied toward the elective course work requirement.

At least 64 hours of credit, which may include SE 599, must be earned in residence.

<table>
<thead>
<tr>
<th>Minimum GPA:</th>
<th>3.25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum 500-level credit hours applied toward the degree:</td>
<td>28</td>
</tr>
</tbody>
</table>

Independent study/project design do not count toward 500-level requirement.

A maximum of 8 credit hours of SE 594 (or other approved project design/independent study) may be counted toward the degree.

Ph.D. exam and dissertation requirements:
- Qualifying exam
- Preliminary exam
- Final exam or dissertation defense
- Dissertation deposit

**EP Documentation**

**DMI Documentation**

**Banner/Codebook Name**

PHD: Sys&Entrepreneurial Eng-UIUC

**Program Code:**

10KS3846PHD

**Degree Code**

PHD

**Major Code**

3846

**Program Reviewer Comments**


Key: 335
10K3846PHD Program Code  
Effective Fall 2021

<table>
<thead>
<tr>
<th>PhDSEE Approved Masters Current</th>
<th>PhDSEE Approved Masters Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis credit (SE 599)</td>
<td>32</td>
</tr>
<tr>
<td>Seminar registration each semester (IE 590)</td>
<td>0</td>
</tr>
<tr>
<td>Approved SE and IE Courses</td>
<td>16</td>
</tr>
<tr>
<td>Electives in consultation with advisor</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
</tr>
</tbody>
</table>

A minimum of 16 credit hours of 500-level credit must be applied toward the degree, all of which must from a College of Engineering department, including ABE and CHBE.  
At least 16 hours of 500-level credit must be applied toward the degree. Independent study/project design do not count toward 500-level requirement.

A maximum of 8 hours of IE 597 (or other approved independent study) may be applied toward the elective course work requirement.  
A maximum of 8 credit hours of SE 594 (or other approved project design/independent study) may be counted toward the degree.

PhD exam and dissertation requirements: qualifying exams, preliminary exam, final exam or dissertation defense, dissertation deposit.  
PhD exam and dissertation requirements: qualifying exams, preliminary exam, final exam or dissertation defense, dissertation deposit.

Minimum GPA: 3.25  
Minimum GPA: 3.25

The Elective courses must be at the 500-level and from a College of Engineering department including ABE and CHBE.  
At least 64 hours of credit, which may include SE 599, must be earned in residence.

<table>
<thead>
<tr>
<th>PhDSEE Approved Bachelors Current</th>
<th>PhDSEE Approved Bachelors Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis credit (SE 599)</td>
<td>36</td>
</tr>
<tr>
<td>Seminar registration each semester (IE 590)</td>
<td>0</td>
</tr>
<tr>
<td>Approved SE and IE Courses</td>
<td>28</td>
</tr>
<tr>
<td>Electives in consultation with advisor</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>96</td>
</tr>
</tbody>
</table>

A minimum of 28 credit hours of 500-level credit must be applied toward the degree, all of which must from a College of Engineering department, including ABE and CHBE.  
At least 28 hours of 500-level credit must be applied toward the degree. Independent study/project design do not count toward 500-level requirement.

A maximum of 8 hours of IE 597 (or other approved independent study) may be applied toward the elective course work requirement.  
A maximum of 8 credit hours of SE 594 (or other approved project design/independent study) may be counted toward the degree.

PhD exam and dissertation requirements: qualifying exams, preliminary exam, final exam or dissertation defense, dissertation deposit.  
PhD exam and dissertation requirements: qualifying exams, preliminary exam, final exam or dissertation defense, dissertation deposit.

Minimum GPA: 3.25  
Minimum GPA: 3.25

The Elective courses must be at the 500-level and from a College of Engineering department including ABE and CHBE.  
At least 64 hours of credit, which may include SE 599, must be earned in residence.