

# School of Industrial Engineering and Management

## PhD Degree Program

The Doctor of Philosophy degree is designed for the student who desires to participate at the leading edge of knowledge in the profession of industrial engineering and management. The degree requires the completion of at least 60 credit hours beyond the master's degree or 90 credit hours beyond the bachelor's degree.

### Major Milestones & Timeline

1. Chair and Advisor Selection (First semester)
2. Completion of IE&M Doctoral Seminar Course (First year)
3. Formation of Advisory Committee (End of first year—start of second year)
4. Plan of Study Meeting (Start of second year)
5. Qualifying Exam (Third year)
6. Dissertation Proposal (Third or fourth year)
7. Dissertation Defense (Fourth or fifth year)
8. Submission of Dissertation to Graduate College (Soon after successful defense)

### Chair and Advisor Selection

Typically, the School of IE&M matches incoming PhD students based on their stated interest with a “faculty champion” whom we expect will serve both as the research Advisor and committee Chair. Note that these roles could be filled by different faculty members. If the need arises for a change in the Advisor or Chair at any point in time during the period of study, the doctoral student must work closely with the current Advisor/Chair, the Head, and the Graduate Program Director to manage the change.

### Selection of the Advisory Committee

The selection of the potential Advisory Committee members should be a collaborative activity between the student and his or her Advisor and Committee Chair. Although the student has the ultimate responsibility for recommending the Advisory Committee membership, his or her Advisor (and Chair, if different) can be a valuable resource with insights that will help the student make informed decisions. The student should meet with potential Advisory Committee members prior to recommending them to better understand their experience, availability, mentoring style, and willingness to serve as an Advisory Committee member. Doctoral students should consult the members of the Advisory Committee frequently and keep them informed on the progress of their work. The requirements an IE&M Advisory Committee must meet can be found at the link<sup>1</sup> provided.

### IE&M Doctoral Seminar

The IE&M Doctoral Seminar (IEM 6903) is designed to train the doctoral student in the doctoral dissertation research process and is normally taken in the first year of the student's doctoral program. The course will involve significant work outside the classroom, under the supervision of the student's research advisor. The class meetings will be used for some formal instruction on research methods/process, discussion of current research in IE&M led by select faculty, guest speakers, presentations by students, etc. The main deliverable is expected to be a “mini” research proposal that the student will develop working closely with their research advisor on a topic that may or may not be related their dissertation research. The student is also expected to make three to four in-class presentations and present the proposal in front of an IEM faculty committee of three including the instructor and the research advisor. The course will also facilitate the development of a preliminary Plan of Study designed to help the student successfully complete the next immediate step in the PhD program.

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<sup>1</sup> <http://iem.okstate.edu/sites/default/files/committee.pdf>

### Plan of Study

The Plan of Study must include a minimum of 60 (90) graduate credit hours with at least 30 (60) hours of graduate coursework beyond the master's (bachelor's) degree. Courses for graduate credit are selected by the student with the approval of the advisory committee.

The Plan of Study must also include 3 credit hours of IE&M Doctoral seminar, at least 18 credit hours of dissertation research, and 6 credit hours of research tools/methodology courses. Note that IEM 6903 (Doctoral Seminar) does not count towards the minimum 30 (60) hours of graduate coursework required. The 6 credit hours of research tools/methodology courses must be from outside IE&M and from a subject area that is related to the student's dissertation research. The specific number of credit hours allocated to courses and research is determined by the committee and depends on the student's needs to successfully accomplish the research objectives.

### Academic Qualifying Exam

A weeklong take-home qualifying exam is given near the completion of the coursework portion of the program. This written and oral exam is used to determine the student's ability to proceed with the research portion of the program. Further details on the qualifying exam can be found online at the link<sup>2</sup> provided.

### Dissertation Proposal

The student's development of the dissertation topic and proposal should be an ongoing process following the completion of the Plan of Study meeting. The student submits the dissertation proposal to the advisory committee after the successful completion of the academic qualifying examination. This is followed by an oral defense of the proposal. After successful completion of the proposal defense, the student applies for admission to candidacy. Further details on the proposal can be found online at the link<sup>3</sup> provided.

### Final Defense

The final oral defense will normally occur no sooner than two weeks after each advisory committee member has received a copy of the student's completed dissertation. The student will give a presentation summarizing the dissertation results in an open session (open to all interested faculty and students) followed by a question and answer session with the advisory committee in a closed session. After successful completion of the dissertation defense, the student prepares the dissertation document for submission to the graduate college. Further details regarding the dissertation draft submission, scheduling of the defense, advisory committee expectations, and defense outcomes can be found online at the link<sup>4</sup> provided.

Visit: <http://iem.okstate.edu/node/34> for all IEM Graduate Program Documents.

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<sup>2</sup> <http://iem.okstate.edu/sites/default/files/phdqual.pdf>

<sup>3</sup> <http://iem.okstate.edu/sites/default/files/disspro.pdf>

<sup>4</sup> <http://iem.okstate.edu/sites/default/files/dissertation.pdf>