DOCTOR OF PHILOSOPHY WITH A MAJOR IN INDUSTRIAL ENGINEERING

All PhD programs must incorporate a standard set of Requirements for the Doctoral Degree.

Students in the Ph.D. with a major in Industrial Engineering program choose a single track from: General Industrial Engineering, Supply Chain Engineering, Statistics, Economic Decision Analysis, and System Informatics & Control.

Each track has specific course requirements. Students are expected to complete the course programs described below prior to candidacy, and many of the courses are recommended to be completed prior to the comprehensive examination. Students seeking to waive a program course requirement must receive permission from the Associate Chair for Graduate Studies. It is not our intent to have students repeat coursework that they may have already mastered during prior graduate degree programs, so please ask for appropriate waivers.

General Industrial Engineering

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Comprehensive Exam

The General Industrial Engineering comprehensive exam has two parts:

1. Written exam: Students have to select any two courses from Group 1 methodology core of General Industrial Engineering track. They are required to solve one question each from these 2 topics. Both questions are to be solved in one three hour exam.
2. Research paper: The research paper must be submitted by the day of the exam. The paper must be:
   - Written 100% by the student. (The student may mention the name of faculty/student collaborator.)
   - No more than 10 pages (excluding references), font size 11, margin at least 1 inch.
   - The first page should contain the title, the research collaborators, and a short abstract.
   - The introduction should be a broadly accessible to a non-expert and contain exposition of the main goals, ideas and techniques, including motivation and a clear literature survey (The entire paper can be a literature survey paper).
### Supply Chain Engineering

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</table>

1. Computational core may be chosen from the list above or can be other graduate-level courses related to the major area of study.
2. Decided in consultation with advisor.
3. Up to two technical electives may double-count toward satisfying the minor requirement.

### Comprehensive Exam

The Supply Chain Engineering comprehensive exam has two parts:

1. **Written exam:** Students have to select any two courses from Group 1 methodology core of Supply Chain Engineering track. They are required to solve one question each from these 2 topics. Both questions are to be solved in one three hour exam.

2. **Research paper:** The research paper must be submitted by the day of the exam. The paper must be:
   - Written 100% by the student. (The student may mention the name of faculty/student collaborator.)
   - No more than 10 pages (excluding references), font size 11, margin at least 1 inch.
   - The first page should contain the title, the research collaborators, and a short abstract.
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### Statistics

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1,2,3
The Economic Decision Analysis comprehensive exam has two parts:

1. Written exam: Students have to select any two courses from Group 1 methodology core of Economic Decision Analysis track. They are required to solve one question each from these 2 topics. Both questions are to be solved in one three hour exam.

2. Research paper: The research paper must be submitted by the day of the exam. The paper must be:
   - Written 100% by the student. (The student may mention the name of faculty/student collaborator.)
   - No more than 10 pages (excluding references), font size 11, margin at least 1 inch.
   - The first page should contain the title, the research collaborators, and a short abstract.
   - The introduction should be a broadly accessible to a non-expert and contain exposition of the main goals, ideas and techniques, including motivation and a clear literature survey (The entire paper can be a literature survey paper).

**System Informatics and Control**

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Comprehensive Exam
The comprehensive exam for System Informatics and Control is based on all three domain courses.

Dissertation Research Proposal (for all tracks)
The first step toward completing a final dissertation is to receive formal approval of a dissertation research topic. This is accomplished via the Dissertation Research Proposal. Students must present their dissertation research proposal to the Thesis Advisory Committee no later than the end of Spring semester of the student’s third full year in the program.

Each Ph.D. student must prepare a cogent, self-contained written research proposal that should describe the research to be addressed, demonstrate an understanding of existing work, describe intended research approaches, and present initial and anticipated results. The student must deliver this proposal, along with an oral presentation, to his/her committee. The content expected in the written research proposal should be discussed with the research advisor and committee members.

If judged to be satisfactory, the Thesis Advisory Committee members must sign the appropriate section of the Request for Admission to Ph.D. Candidacy form approving the thesis topic. Each member of the committee must also complete the Dissertation Proposal Assessment Form, available on the ISYE website. The student should bring copies of all forms to the proposal presentation and is responsible for returning all forms to the Academic Programs Office. A student must present the thesis proposal at least one semester prior to the Final Doctoral Examination.

A student who fails to obtain approval of his/her thesis proposal must modify the existing proposal, and if required by the Thesis Advisory Committee, must defend the modified proposal in a subsequent oral presentation. If this second thesis proposal is not successful, the student will have not more than 6 months to identify a new research topic and if necessary a new research advisor, and to report this information to the Associate Chair for Graduate Studies. Failing to do so will prevent a student from continuing in the program.

Dissertation (for all tracks)
The primary requirement of a Ph.D. program is the completion of a dissertation, a written work documenting the research findings of a searching and authoritative investigation of a topic in the chosen primary field of study. The dissertation must either extend the boundaries of fundamental knowledge in a field or provide a new and better understanding or interpretation of facts already known. It should demonstrate that the candidate possesses powers of original thought, a talent for scholarship and research, and an ability to organize and present his/her findings.

Georgia Tech Graduate Studies maintains a website that discusses policies and requirements for Ph.D. dissertations at Georgia Tech.

Minor (for all tracks)
The minor will follow the standard Georgia Tech requirement: 6 hours outside the student's home unit with a letter grade of 'C' or higher. The courses for the minor should form a cohesive program of study that is approved by the ACGS. Courses selected from the breadth requirements can be used to count toward the Minor.