

**University of Arkansas  
Department of Industrial Engineering**

**Graduate Student Handbook**

Revised: October 5, 2009

*For questions or comments, contact:*  
Scott J. Mason, Ph.D. ([mason@uark.edu](mailto:mason@uark.edu))  
Associate Professor and Associate Head  
Chair of Graduate Studies

Department of Industrial Engineering  
University of Arkansas  
4207 Bell Engineering Center  
Fayetteville, AR 72701

## Table of Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Degree Programs	1
1.2	Admission Requirements	1
<b>2</b>	<b>Common Program Requirements</b>	<b>2</b>
2.1	Graduate School's Academic Honesty Policy for Graduate Students	2
2.1.1	Scope, Implementation and Review	2
2.1.2	Academic Honesty	2
2.1.3	Procedures	3
2.1.4	Sanctions	6
2.2	Selecting a Program Committee and Major Professor	7
2.2.1	M.S. Committees	7
2.2.2	Ph.D. Committees	7
2.3	Cumulative GPA Requirement	7
2.3.1	Academic Probation	7
2.3.2	Academic Suspension	7
2.3.3	Readmission after Suspension	8
2.3.4	Academic Dismissal	8
2.4	Deficiency Courses	8
2.5	Transfer of Graduate Credit	9
2.6	Graduate Seminar	9
2.7	Graduate Assistantships	9
2.8	Maximum Course Work Hours for Graduate Assistants	10
2.9	Time Limits for Completing Graduate Degrees	10
2.10	Graduate Student Review	10
2.11	Graduate Student Portfolio	11
<b>3</b>	<b>Master of Science Degrees</b>	<b>12</b>
3.1	Requirements for M.S. Examinations	12
3.1.1	Thesis and Project Options	12
3.1.2	Course Work Option	12
3.2	Master of Science in Industrial Engineering	12
3.3	Master of Science in Operations Management	13
3.4	Master's Degree Candidate Checklist	13
3.5	Master's Record of Progress	13
<b>4</b>	<b>Doctor of Philosophy Degrees</b>	<b>14</b>
4.1	Requirements for Ph.D. Qualifying Examination	14
4.2	Ph.D. Coursework Requirements	14
4.2.1	Direct Admit Ph.D. Students	15
4.2.2	Regular Admit Ph.D. Students	16
4.3	Ph.D. Degree Candidate Checklist	16

# 1 Introduction

## 1.1 Degree Programs

The Industrial Engineering Department offers graduate degrees for on-campus students in three areas:

- Master of Science in Industrial Engineering (M.S.I.E.)
- Doctor of Philosophy in Engineering (Ph.D.)

In addition to the on-campus degree options, the Industrial Engineering Department also offers the following off-campus (distance education) degree:

- Master of Science in Operations Management (M.S.O.M.)

## 1.2 Admission Requirements

Entrance into graduate study in Industrial Engineering is a two-stage process. First, the candidate must meet all the minimum admission requirements listed in the Graduate catalog and be admitted by the Graduate School. Second, Departmental minimum requirements must be met.

**All applicants must present a Resume, Statement of Purpose, results from the GRE and three (3) letters of recommendation.** If possible, please provide the e-mail address of each person writing the recommendation letter.

Regular admission status may be granted to applicants who meet the following requirements.

- Hold a Bachelor's Degree
- Earn a minimum GPA of 3.0 over the last 60 hours of undergraduate course work
- Furnish GRE examination scores (successful applicants typically score over 1,200 on the GRE Verbal and Quantitative sections combined and earn over 4.0 on the GRE Analytical Writing exam)
- Earn a TOEFL score of at least 550 (paper-based), 213 (computer-based), or 80 (internet-based) or IELTS score of 6.5. This requirement is waived for applicants whose native language is English or who earn a Bachelor's or Master's degree from a U.S. institution.

## **2 Common Program Requirements**

### **2.1 Graduate School's Academic Honesty Policy for Graduate Students**

#### *2.1.1 Scope, Implementation and Review*

The procedures contained in this policy pertain to graduate students under the authority of the Graduate School. Master's students in the Graduate School of Business should contact their dean's office for policies pertaining to them. Law students should contact the School of Law. Undergraduate students should refer to the *Student Handbook*. Where policies contained herein conflict with those described for undergraduate students in the *Student Handbook*, the policies contained in this policy shall take precedence for graduate students.

For details of procedures for implementing this policy, contact the Office of Community Standards and Student Ethics or the Graduate School. This University policy does not preclude the implementation by colleges or schools of more rigorous policies.

#### *2.1.2 Academic Honesty*

The University of Arkansas presents this policy as part of its effort to maintain the integrity of its academic processes. Academic honesty should be a concern of the entire university community, and a commitment to it must involve students, faculty, staff, and administrators.

Students must understand what academic integrity is and what the most common violations are. With that understanding they must commit themselves to the highest standards for their own, as well as for their peers', academic behavior.

Public support and encouragement by the faculty is a second critical component necessary to strengthen academic integrity on campus. Faculty members must be continually vigilant in the management of their classes, their assignments, and their tests.

Finally, the administration of the University must present to the students standards of academic integrity. Those standards must be part of a publicly recognized, understood, and accepted set of policies and procedures that can be applied consistently and fairly in cases of academic dishonesty.

It is the responsibility of each student, faculty member, and administrator to understand these policies. A lack of understanding is not an adequate defense against a charge of academic dishonesty.

With regard to the application of this policy, the University assures its support of faculty members and other employees of the University who are acting in good faith in the course and scope of their employment and in the performance of their official duties.

This policy is only a part of the University's effort to promote academic and research integrity in all aspects of its programs. By necessity, this policy discusses only prohibited acts and a process of applying sanctions. The ultimate goal, of course, is to provide an atmosphere that will make superfluous the procedures and sanctions that follow.

### **Definitions**

Academic dishonesty involves acts that may subvert or compromise the integrity of the educational or research process at the University of Arkansas. Included is an act by which a student gains or attempts to gain an academic advantage for himself or herself or another by misrepresenting his or her or another's work or by interfering with the completion, submission, or evaluation of work. Academic misconduct may include those acts defined as research or scholarly misconduct. Allegations of research or scholarly misconduct on the part of graduate students are subject to this policy. However, such cases may also be reviewed under the University's Research and Scholarly Misconduct Policies and Procedures.

Academic and/or research misconduct may include, but is not limited to accomplishing or attempting any of the following acts:

- Altering grades or official records.
- Using any materials that are not authorized by the instructor for use during an examination.
- Copying from or viewing another student's work during an examination.
- Collaborating during an examination with any other person by giving or receiving information without specific permission of the instructor.
- Stealing, buying, or otherwise obtaining information about an examination not yet administered.
- Collaborating on laboratory work, take-home examinations, homework, or other assigned work when instructed to work independently.
- Substituting for another person or permitting any other person to substitute for oneself to take an examination.
- Submitting as one's own any theme, report, term paper, essay, computer program, other written work, speech, painting, drawing, sculpture, or other art work prepared totally or in part by another.
- Submitting, without specific permission of the instructor, work that has been previously offered for credit in another course.
- Plagiarizing, that is, the offering as one's own work the words, ideas, or arguments of another person or using the work of another without appropriate attribution by quotation, reference, or footnote. Plagiarism occurs both when the words of another are reproduced without acknowledgement and when the ideas or arguments of another are paraphrased in such a way as to lead the reader to believe that they originated with the writer. It is not sufficient to provide a citation if the words of another have been reproduced – this also requires quotation marks. It is the responsibility of all University students to understand the methods of proper attribution and to apply those principles in all materials submitted.
- Sabotaging of another student's work.
- Falsifying or committing forgery on any University form or document.
- Submitting altered or falsified data as experimental data from laboratory projects, survey research, or other field research.
- Committing any willful act of dishonesty that interferes with the operation of the academic or research process.
- Facilitating or aiding in any act of academic or research dishonesty.

### 2.1.3 *Procedures*

Sanctions for acts of academic dishonesty committed by graduate students may be applied in the following ways.

#### **A. Initial Report of Infraction**

##### **1. *Infractions Involving Graded Course Work***

When an instructor determines or believes that a student in the instructor's class is responsible for academic dishonesty deserving of sanction, the instructor will meet with the student and explain the allegation. Without waiving the option to pursue charges, the instructor may also choose to contact the Office of Student Mediation and Conflict Resolution for help in resolving the situation. If the instructor wishes to pursue charges of academic misconduct, he/she should within five working days after meeting with the student, or as soon as practicable thereafter, follow a. or b., below. If the Office of Student Mediation and Conflict Resolution is involved, the five days does not begin until the instructor is aware of the termination of those services. (If the instructor is either a graduate teaching assistant or a

temporary faculty member, then a supervising faculty member or the departmental head or chairperson may assist in the handling of an academic dishonesty case.)

- a. The instructor may determine a grade sanction and within five working days report that sanction along with the essential details of the matter to the judicial coordinator in the Office of Community Standards and Student Ethics and to the Graduate Dean. The student sanctioned in this way by an instructor will be notified by the Office of Community Standards and Student Ethics and will have five working days from that notification to request a hearing by the All University Judiciary (AUJ). The All University Judiciary is defined, and its composition described, in the *Student Handbook*. If the student does not request a hearing within five working days, then it is assumed that the sanction is not contested. The student will be required to have a conference with the judicial coordinator so that the consequences of the action can be made clear. The student may appeal a grade sanction to the AUJ only on the grounds that he/she did not commit the violation. If the student wishes to appeal the severity of a sanction, he/she will follow the Academic Grievance Procedures for Graduate Students. To the extent practical, at the discretion of the instructor, during the course of an appeal to the AUJ or the Graduate Grievance committee (depending on the nature of the appeal), the student's participation in the affected class should continue so that any action can be reversed without prejudicing the student's academic performance and evaluation. The AUJ is given the authority to determine whether the evidence substantiates the charges of the instructor. If the AUJ determines that the evidence does not substantiate the charges, the grade sanction will be withdrawn and the matter will end. Should the AUJ determine the evidence does substantiate the charges of the instructor, the grade sanction will stand and the AUJ may also impose additional sanctions, as listed under Sanctions, below. The degree program and/or the Graduate School may impose sanctions in addition to those imposed by the instructor and the AUJ, including expulsion from the program or the University. While the instructor should be consulted in such cases, these additional sanctions may be imposed by the AUJ, the Graduate School and/or the degree program without the permission of the instructor. In addition to other sanctions, graduate students may be dismissed by their degree program or the Graduate School on the first or any subsequent instances of academic dishonesty. Students may not withdraw from either courses in which judicial action is pending or in which they have received a grade sanction.
- b. The instructor may file an incident report form referring the case to the student judicial process for determinations of responsibility and the application of sanctions. If the student is determined to be responsible for academic dishonesty, then the instructor may apply a grade sanction in addition to whatever sanctions are applied by the judicial process. To the extent practical, at the discretion of the instructor, while such a case is pending in the judicial process, the student's participation in the affected class should continue, to avoid pre-empting the options available after responsibility is determined. If the student is determined to be responsible for the actions charged, the instructor will impose a grade sanction. The AUJ has no authority to impose a grade sanction, but is permitted to make a recommendation and to impose other sanctions, as described below. Additionally, the Graduate School and/or the degree program may impose sanctions in addition to those imposed by the instructor. In such cases, the instructor should be consulted, but additional sanctions may be imposed by the AUJ, the Graduate School and/or the degree program without the permission of the instructor. Students may not withdraw from a course for which judicial action is pending or in which they have received a grade sanction. Should the graduate student feel that the severity of the grade sanction is unfair, he/she may appeal via the Academic Grievance Policy for Graduate

Students.

It should be noted that, in addition to other possible sanctions, graduate students may be dismissed by their degree program and/or the Graduate School on the first or any subsequent instance of academic dishonesty.

## **2. *Infractions Not Involving Graded Course Work***

Cases of academic misconduct may occur in situations not involving graded course work. One example is a situation where a graduate student plagiarizes material for his/her dissertation. In cases not involving graded course work, the department chairperson/program director and major professor, or other appropriate official(s) will meet with the student. Without waiving the option to pursue charges, the program may also choose to contact the Office of Student Mediation and Conflict Resolution for help in resolving the situation. If the department/ program decides to proceed with charges of academic misconduct, the chair/head/director or other appropriate official will, within five working days after meeting with the student, or as soon as practicable thereafter, follow one of the following: [If the Office of Student Mediation and Conflict Resolution is involved, the five days does not begin until the instructor is aware of the termination of those services.]

- a. The department or program faculty will determine a sanction and the department chairperson/program director will, within five working days after meeting with the student [or as soon as practicable thereafter], report that sanction along with the essential details of the incident to the judicial coordinator in the Office of Community Standards and Student Ethics, and to the Graduate Dean. The student sanctioned in this way by a department or program will be notified by the Office of Community Standards and Student Ethics and will have five working days from that notification to request a hearing by the All University Judiciary (AUJ). The All University Judiciary is defined, and its composition described, in the *Student Handbook*. If the student does not request a hearing within five working days, then it is assumed that the sanction is not contested. The student will be required to have a conference with the judicial coordinator so that the consequences of the action can be made clear. The student may appeal such a sanction to the AUJ only on the grounds that he/she did not commit the violation. If the student wishes to appeal the severity of a sanction, he/she will follow the Academic Grievance Procedures for Graduate Students. While such a case is pending in the student judicial process, to the extent practical, at the discretion of the program, the student's participation in the degree program should continue so that any action can be reversed without prejudicing the student's academic performance and evaluation.
- b. The department chairperson/program director may file an incident report form referring the case to the judicial process for determination of responsibility. If the student is determined to be responsible for academic dishonesty, then the judicial board may impose a sanction in addition to that imposed by the program/department and the Graduate School. Sanctions are listed and described below. To the extent practical, at the discretion of the program, while such a case is pending in the judicial process, the student's participation in the program should continue, to avoid pre-empting the options available after the responsibility is determined. Unlike the situation in which the Judicial Board hears the appeal of a student protesting a sanction imposed by the department/program, students who are sanctioned by the Judicial Board itself may appeal both the imposition of and the severity of the sanction via the Academic Grievance Procedure for Graduate Students. Graduate students may be dismissed by their degree program and/or the Graduate School on the first or any subsequent instance of academic dishonesty.

## B. Appeals

1. ***When a sanction has been imposed by the instructor or department/program:*** The student may appeal such a sanction to the AUJ on the grounds that he/she did not commit the violation. If the student wishes to appeal the severity of a sanction, he/she will follow the Academic Grievance Procedures for Graduate Students. In both cases, the student will notify the appropriate office of his/her appeal within five working days of receiving the sanction, or as soon as practicable. For appeals to the AUJ, the student will contact the Office of Student Ethics and Community Standards. For appeals following the Academic Grievance Procedures for Graduate Students, the student will contact the Graduate School.
2. ***When a sanction has been imposed by the AUJ:*** Unlike the situation in which the Judicial Board hears the appeal of a student protesting a sanction imposed by the department/program, students who are sanctioned by the Judicial Board itself may appeal either or both the imposition of and the severity of the sanction via the Academic Grievance Procedure for Graduate Students. Students who wish to initiate such an appeal shall contact the Graduate School within five working days of receiving the sanction, or as soon as practicable.
3. ***When a sanction has been imposed by the Graduate School:*** Students who are sanctioned by the Graduate School may appeal to the Provost.

### 2.1.4 Sanctions

The choice of sanctions in cases of academic dishonesty involves considerations of the integrity of the educational process of the University. There is no place in that process for academic dishonesty; and these actions will be taken seriously. The intent of this policy is to make acts of academic dishonesty clear risks, that is, the sanctions are to be sufficiently heavy to deter academic dishonesty.

While not intended to be an exhaustive list, the following are possible sanctions for academic dishonesty:

- **Grade Sanctions:** An instructor may impose a grade sanction. Grade sanctions may consist of either grades of zero or failing grades on part or all of a submitted assignment or examination, or a lowering of a course grade, or a failing course grade. All grade sanctions must be appropriately reported as outlined in the procedures above. A graduate student may appeal the severity of a grade sanction via the Academic Grievance Procedures for Graduate Students. Once a grade sanction has been applied, following the procedures outlined herein, students may not withdraw from courses in which they have been assessed a grade sanction, unless this has been recommended by the AUJ or a grievance committee.
- **Other Sanctions:** The graduate student's program or the Graduate School may impose a variety of other sanctions, including but not limited to any of the following: requiring an activity designed to increase the student's awareness of and understanding about academic honesty, placing the student on probation or suspension, or dismissing the student.
- **The AUJ may administer the following sanctions:** university reprimand, university censure, conduct probation, restrictive conduct probation, suspension, indefinite suspension, educational sanctions, or expulsion. Please see the *Student Handbook* for definitions of these sanctions.

**It should be noted that graduate students may receive any of these sanctions, including dismissal, upon the first or any subsequent finding of academic misconduct.**

## 2.2 Selecting a Program Committee and Major Professor

The selection of the Program Committee is an important procedure for both M.S. and Ph.D. students. The chair of the Program Committee (also known as a student's "Major Professor") is responsible for supervising the student's research activities. Students should select a Major Professor early in their program of study. M.S. students should select a Major Professor during the first semester of their graduate program. Doctoral students should complete this selection no later than the second semester of their graduate program. The agreement of the major professor and graduate student to work together must be one of mutual consent.

The Major Professor will assist the student in selecting members of the Program Committee. Selection of both the Major Professor and committee members should be on the basis of research specialization areas. The extent to which these areas overlap with the student's research interest area(s) should be maximized.

### 2.2.1 *M.S. Committees*

Students pursuing a Master's degree in Industrial Engineering should have at least three (3) members on their Program Committee, at least one of whom must be from the Department of Industrial Engineering.

### 2.2.2 *Ph.D. Committees*

Students pursuing a Doctor of Philosophy degree in the Department of Industrial Engineering must have at least four (4) members on their Program Committee. Further, a minimum of three (3) committee members must be on the faculty of the Department of Industrial Engineering, while at least one (1) committee member must come from outside of the Department of Industrial Engineering.

The members of the Program Committee must be identified and reported to the Graduate School in the semester that the Major Professor is selected. The student should also formulate a plan of study that specifies those courses that will be taken to satisfy degree requirements. This plan of study must be approved by the Major Professor and the Program Committee and detailed in the student's Graduate Student Portfolio.

## 2.3 Cumulative GPA Requirement

All graduate students must maintain at least a 3.0 cumulative GPA for all courses taken for graduate credit in order to be eligible for graduation. Any deficiency courses assigned to the student do not factor into the department's cumulative GPA computations.

### 2.3.1 *Academic Probation*

A graduate student who fails to meet the Department of Industrial Engineering's cumulative GPA requirement of 3.0 out of 4.0 for all courses attempted for graduate credit will be placed on **probation** for one semester. At the end of this probationary semester, if the student earns sufficient grade points such that his/her cumulative GPA on courses taken for graduate credit meets the department's minimum requirement, the student will be taken off of academic probation and will return to normal status.

### 2.3.2 *Academic Suspension*

A student who fails to earn sufficient grade points to meet the minimum required cumulative GPA will be **suspended** from full-time enrollment. No student may be suspended who has not spent the prior term of enrollment on academic probation. A suspended student must take academic leave of one (1) year from the Department of Industrial Engineering.

### 2.3.3 *Readmission after Suspension*

Students on academic suspension may apply for readmission one year after the term of the suspension. The student's readmission application must also contain a letter to the Department of Industrial Engineering's Graduate Studies Committee explaining what went wrong in their past educational experience and how the student plans to avoid these problems in the future.

A student who is readmitted to the Department of Industrial Engineering after serving their term of suspension may take between six (6) and nine (9) hours and must earn sufficient grade points such that their

- cumulative GPA on courses taken for graduate credit meets the department's cumulative GPA requirement of 3.0 out of 4.0, OR
- their semester GPA is at least 3.5 out of 4.0

Once the student has earned sufficient grade points such that his/her cumulative GPA on courses taken for graduate credit meets the department's cumulative GPA requirement, he/she will be taken off of academic probation and will return to normal status.

Students who have not achieved a cumulative GPA of 3.0 out of 4.0 on all courses taken for graduate credit, but earn a semester GPA of 3.5 out of 4.0 or higher, will continue on academic probation until they either

- attain the required cumulative GPA of 3.0 out of 4.0, at which time they will be restored to normal status, OR
- fail to earn a semester GPA of 3.5, at which time they will be dismissed from the Industrial Engineering graduate program

### 2.3.4 *Academic Dismissal*

Failure to satisfy the department's cumulative GPA requirement and earning a semester GPA of less than 3.5 out of 4.0 will result in **dismissal**. *Academic dismissal is permanent, as the Department of Industrial Engineering will not admit a student for the third time.*

## 2.4 Deficiency Courses

Graduate students must register for any deficiency courses they have (i.e., no test outs) in the first possible semester in which the deficiency course is offered that the student is eligible to take the course (i.e., all deficiency course prerequisites have been met). Failure to do so is grounds for dismissal from the INEG graduate program. Graduate students must earn a grade of "B" or better to remove deficiency for all deficiency courses.

- Differential Calculus (MATH 2554 Calculus 1 or equivalent)
- Integral Calculus (MATH 2564 Calculus 2 or equivalent)
- Multivariate Calculus (MATH 2574 Calculus 3 or equivalent)
- Probability Theory (INEG 3313 Engineering Statistics or equivalent)
  - Probability distributions and hypothesis testing
- Engineering Economic Analysis (INEG 3413 or equivalent)
  - Time value of money, depreciation, comparison of investment alternatives
- Statistics (INEG 3333 Industrial Statistics or equivalent)
  - Regression, design of experiments, quality control

The courses listed above do not count for graduate credit towards the minimum number of course work hours required for any graduate degree and therefore do not count for or against the graduate program's cumulative GPA requirements.

## 2.5 Transfer of Graduate Credit

No more than six (6) credit hours may be accepted for transfer and a grade of “B” or better must have been earned on these courses. In addition, the student must ensure that Graduate School transfer requirements are met. It is the responsibility of the student's Program Committee to discern the benefit of such credits to the student's overall degree plan.

## 2.6 Graduate Seminar

On-campus graduate students are expected to attend graduate seminar every semester in which they are registered for on-campus credits. The meeting time of the graduate seminar will be posted with advanced notice for all students. The seminar time will be set so as not to conflict with any other INEG graduate course.

The content of seminar lectures will include, but is not limited to, the following:

- Guest speakers from industry and academia
- Student research
- Faculty research
- Graduate degree issues

## 2.7 Graduate Assistantships

The Industrial Engineering department offers both quarter-time (10 hours per week) and half-time (20 hours per week) graduate assistantships to qualified graduate students. Currently, the monthly salary for M.S.I.E. students is \$500 for quarter-time positions and \$1,000 for half-time positions. Ph.D. students are paid \$750 and \$1,500 for quarter- and half-time positions, respectively. Doctoral students who have passed their qualifying application (i.e., “Ph.D. Candidates”) are paid \$850 per month for quarter-time positions and \$1,700 per month for half-time positions, beginning the next semester after the exam is passed.

While quarter-time positions carry with them an out-of-state tuition waiver, half-time positions include a full tuition waiver. However, graduate students selected for either type of assistantship are required to cover the cost of their registration and laboratory fees (typically \$300-\$500 per semester).

The Industrial Engineering faculty makes assistantship decisions a few weeks prior to the beginning of each long semester.

When the Graduate School has agreed to pay tuition for graduate assistants, the Graduate School will only pay for those courses that are degree related or when the Graduate School has approved a petition from the student’s major professor requesting that the Graduate School pay for non-degree-related courses.

The Graduate School will only pay for graduate hours, unless the courses are deficiencies that have been required by the student's adviser/committee. Recommended EASL courses will be paid unless the Graduate School is otherwise instructed by the department; EASL courses are in addition to the 6 required graduate hours.

Courses taken by audit will not be paid unless the Graduate School has approved those courses individually.

International teaching assistants whose teaching assignment will require that they interact with students MUST have a TSE score of 50 or a grade of “Pass” on the SLPT. The student CANNOT be in the classroom until he/she has either passed the TSE or the SLPT.

Master's students cannot receive a graduate assistantship for more than four semesters and doctoral students cannot receive a graduate assistantship for more than eight semesters. Any extension for a graduate assistant must be petitioned in writing and approved by the Graduate Dean.

## 2.8 Maximum Course Work Hours for Graduate Assistants

The Graduate School at the University of Arkansas has set forth the following maximum hours that can be undertaken by graduate students on assistantship (either research or teaching) in the fall and spring semesters:

### **Students Appointed 25-49% Time**

- Out of state tuition paid
- Must register for a minimum of 9 hours
- Can only register for a maximum of 18 hours

### **Students Appointed 50-74% Time**

- In and Out of state tuition paid
- Must register for a minimum of 6 hours
- Can only register for a maximum of 15 hours

### **Students Appointed 75-99% Time**

- In and Out of state tuition paid
- Must register for a minimum of 3 hours
- Can only register for a maximum of 6 hours

For more details, see <http://www.uark.edu/depts/gradinfo/prospective/enrollmentguidelines.html>

## 2.9 Time Limits for Completing Graduate Degrees

The Graduate School at the University of Arkansas has set forth the following maximum number of years to complete a graduate degree:

- Master of Science (M.S.) degrees must be completed within six (6) years of the student's admission date.
- Doctor of Philosophy (Ph. D.) degrees must be completed within seven (7) years of the student's Declaration of Intent filing date.

## 2.10 Graduate Student Review

The Department of Industrial Engineering is committed to ensuring the timely progress of graduate students as they complete their degree requirements. As part of that commitment, the Department has devised an annual review process to provide feedback on overall performance. In summary, the annual review verifies whether the student is making adequate progress in the following areas:

- Program of study (including thesis/project/course work option)
- Deficiencies
- Advisor/committee chosen
- Graduate course work (including adequate GPA)

- Thesis/dissertation/project
- Proposal and Defense
- Required exams (qualifier, comprehensive)
- Communication with advisor and committee members

Progress in each area will be noted as follows: **satisfactory** / **unsatisfactory** / **not applicable**. The Industrial Engineering Graduate Handbook has a description of the INEG Graduate Student Portfolio that enables detailed tracking of graduate student progress.

The review committee will comprise the student's major professor and the chair of the INEG Graduate Studies Committee. If these are the same person, the committee will include the Department Head.

As part of the annual review process, the review committee will conduct formal face-to-face interviews with each graduate student. For off-campus students and other cases in which face-to-face interviews are impossible or impractical, the review committee will conduct an interview via conference call. In any case, the review committee will mail or hand-deliver a copy of the official Graduate School review form and, if needed, a memo describing how to remedy poor progress.

The Department will make every reasonable effort to ensure that the annual review process and interview are not excessively burdensome. Students who refuse to participate in the review process and interview may be dropped from the program. The department will make every reasonable effort to ensure that graduate students recognize these consequences.

#### 2.11 Graduate Student Portfolio

The Department of Industrial Engineering is committed to ensuring the timely progress of graduate students as they complete their degree requirements. As part of that commitment, the Department has devised an annual review process to provide feedback on overall performance. The [INEG Graduate Student Portfolio template file](#) enables detailed tracking of graduate student progress.

INEG graduate students are responsible for keeping their portfolio up-to-date. Students must submit a current portfolio, in both paper and electronic format, to the [Graduate Studies Chairman](#) by April 1 and November 1 each year. These portfolios will be made available to interested faculty members at all times, including during assistantship assignments.

Students who fail to provide an updated portfolio by the required due dates will not be considered for future assistantship awards and may receive an unsatisfactory graduate student review.

### 3 Master of Science Degrees

#### 3.1 Requirements for M.S. Examinations

The Graduate School requires all Master's degree candidates to successfully pass a comprehensive examination. The type of examination required varies according to the student's chosen degree option.

**INEG's policy is that a student can take the final oral exam at most two times for the M.S. degree, regardless of degree option.** If the student fails the exam twice, he/she will be dismissed from the Master's program.

##### 3.1.1 Thesis and Project Options

Two examinations apply for M.S. students that complete theses or research projects. Proposals for theses or projects will be presented to the candidate's Program Advisory Committee in conjunction with a Preliminary Oral Examination. The examination will be public and will be open to interested faculty and students. During the Preliminary Oral Examination, the candidate will present and defend the scope of the proposed research to be completed.

The completed thesis or research project will be defended during a Final Oral Examination. This examination provides the candidate the opportunity to defend the scope, accuracy, utility, and value of the completed thesis or project. The completed work will be orally presented to the candidate's Program Advisory Committee. The examination will be public and open to interested faculty and students.

##### 3.1.2 Course Work Option

A final oral examination applies for M.S. students that complete the course work option for their Master's degree. The student's Program Advisory Committee conducts the oral exam and decides upon the examination's content. Upon completion of the oral exam, each member of the Program Advisory Committee votes pass/fail, with majority rules.

The student is responsible for scheduling the final examination during the semester in which they will complete their last six (6) hours of course work for the degree.

#### 3.2 Master of Science in Industrial Engineering

The Master of Science in Industrial Engineering degree can be satisfied in one of three ways, all of which require a minimum of 30 hours:

##### Thesis Option

- Completion of all required background/deficiency courses
- Minimum of 6 hours of thesis (INEG 600V)
- Minimum of 24 hours of graduate course work, as follows:
  - Minimum of 15 credits of 5000+ INEG courses
  - Maximum of 3 credits of INEG 515V Individual Study in Industrial Engineering

##### Project Option

- Completion of all required background/deficiency courses
- Minimum of 3 hours of INEG 513V Master's Research Project and Report
- Minimum of 27 hours of graduate course work, as follows:
  - Minimum of 18 credits of 5000+ courses, 18 of which shall be INEG courses

- Maximum of 3 credits of INEG 515V Individual Study in Industrial Engineering

#### Course Work Option

- Completion of all required background/deficiency courses
- Minimum of 30 hours of graduate course work, as follows:
  - Minimum of 21 credits of 5000+ INEG courses
  - Maximum of 3 credits of INEG 515V Individual Study in Industrial Engineering

Regardless of degree option pursued, M.S.I.E. students may take INEG 4000-level courses for credit towards their degree provided the student has not taken the course previously for use with another degree program.

#### 3.3 Master of Science in Operations Management

Off-campus students may pursue a [Master of Science in Operations Management](#). For more information on this degree option, please consult the [Operations Management](#) web site.

#### 3.4 Master's Degree Candidate Checklist

- [Master's record of progress](#)
- [Master's advisory committee report](#)
- [Master's Thesis Title](#)
- [Master's Thesis Committee Report](#)
- [Request for Transfer of Graduate Credit](#)
- [Guide to Theses/Dissertations](#)
- [Tax Guidelines for Graduate Students](#) (Taxation of Educational Grants)
- [Intellectual Property Disclosure Form](#)
- [Library Transmittal Form](#)
- [Master's Thesis Publishing Agreement Form](#)

*Final Copies of the Thesis/Project:* After the Committee has approved the corrected work, two unbound copies complete with abstracts must be presented to the Dean of the Graduate School. For the two unbound copies, one should be on 100% cotton bond paper, while the other can be on regular copy/printer paper. Original signatures are now needed on cotton bond paper only. The approval sheet printed on copy paper should not contain the signatures of the committee members. Finally, one bound copy must be presented to the IE Graduate Program for placement in the Departmental Library. Candidates are also advised to give bound copies of their work to every member of his/her committee.

#### 3.5 Master's Record of Progress

The Graduate School's Record of Progress form is completed at the student's final oral examination. There are signature lines on this form for the entire committee (including major advisor). Everyone who is listed as a member on the student's program committee form must sign on these signature lines. Stamped signatures are not acceptable. Nor can anyone sign for anyone else.

If a student has revisions to make or some other requirement to complete, the INEG department will hold the forms and/or the signatures pages until the student has met all requirements.

## 4 Doctor of Philosophy Degrees

### 4.1 Requirements for Ph.D. Qualifying Examination

A student's Qualifying Examination committee must consist of at least three INEG professors. Additional committee members (either from INEG or outside the department) are allowed. Each member of the Ph.D. student's advisory committee will provide the student with a question(s). The content of the question is left to the discretion of the committee member.

The student will have 14 calendar days to develop written responses to each of these questions. Within 14 calendar days of submission of the written responses, the student will stand for an oral exam, where the committee can ask the student about their written responses or anything else they see fit.

The committee votes pass/fail, with majority rules. The qualifying exam must be taken no later than one semester before the student intends to propose his or her dissertation research.

The student can take the Ph.D. qualifying exam up to two times. If the student fails the exam twice, they must leave the Ph.D. program.

After completion of the Candidacy examination, doctoral students will be considered candidates for graduation, contingent upon the successful completion of a doctoral dissertation. In addition, Ph.D. students on assistantship who successfully pass their qualifying examination receive a \$200 per month pay increase, to start in the next long semester after their successful exam completion.

### 4.2 Ph.D. Coursework Requirements

In addition to the requirements of the Graduate School, the following requirements have been established by the College of Engineering for all doctoral graduates:

1. All students must complete a minimum of 78 semester hours of graduate level credit beyond the engineering bachelor's degree, including a minimum of 48 semester hours of course work and a minimum of 30 semester hours of dissertation research credits.
2. A minimum of 30 semester hours of course work must be at the graduate level (5000 or above).
3. Upon recommendation of the student's advisory committee, a student who has entered the Ph.D. program after a master's degree in engineering may receive credit for up to 30 semester hours. If the 30 hours includes master's thesis research, the advisory committee may credit up to 6 hours of thesis research toward the minimum dissertation research requirement.
2. Complete a minimum of 9 semester credit hours of course work in a set of coherent courses in a related subject area approved by the student's advisory committee.
3. A cumulative grade-point average of 3.0 on all graduate courses attempted.
4. Satisfactorily pass both a written and oral qualifying examination. At this point, the student becomes a Ph.D. Candidate in Industrial Engineering.
  - After the student has passed the candidacy examinations the student must register for at least one hour of INEG 700V Dissertation in each semester and one hour during the summer session until the work is completed whether the student is in residence or away from the campus. For each semester in which a student fails to register without prior approval of the Dean of the Graduate School, a registration of three hours will be required before the degree is granted.
5. Complete and defend a dissertation on some topic in the student's major field of study.
6. Satisfactorily pass a final comprehensive oral examination.

The Department of Industrial Engineering has the following requirements for all Ph.D. students that are above and beyond the College of Engineering's minimum requirements:

7. Students must successfully complete a minimum of 30 credit hours of formal coursework beyond the Master's level.
8. 21 hours out of a student's additional 30 hours of formal coursework must be at the 5000+ level, with a minimum of 18 hours in the INEG department.

Students can be admitted to Ph.D. studies in the Department of Engineering either upon completion of a Bachelor's degree ("direct admit") or upon completion of a Master's degree ("regular admit").

#### *4.2.1 Direct Admit Ph.D. Students*

Direct admit students may earn a Master of Science in Industrial Engineering degree from the Department of Industrial Engineering during their PhD studies, but they are not required to do so. Therefore, the Ph.D. coursework requirements for direct admit students who do not hold a Master's degree vary according to whether or not an MSIE degree is completed (and if so, what degree option is pursued):

##### Students Completing MSIE at UA (Thesis Option)

- A minimum of 54 hours of graduate coursework
  - 24 hours count towards MSIE Thesis Option coursework requirements
    - Maximum of 3 credits of INEG 515V Individual Study in Industrial Engineering
  - 30 hours count towards Ph.D. coursework requirements
  - 36 of the 54 hours must be at the 5000+ level, with a minimum of 33 hours in the INEG department.
- A minimum of 6 hours of thesis research credit (INEG 600V)
- A minimum of 24 hours of dissertation research credit (INEG 700V)

##### Students Completing MSIE at UA (Project Option)

- A minimum of 57 hours of graduate coursework
  - 27 hours count towards MSIE Project Option coursework requirements
    - Maximum of 3 credits of INEG 515V Individual Study in Industrial Engineering
  - 30 hours count towards Ph.D. coursework requirements
  - 39 of the 57 hours must be at the 5000+ level, with a minimum of 36 hours in the INEG department.
- A minimum of 3 hours of project research credit (INEG 513V)
- A minimum of 27 hours of dissertation research credit (INEG 700V)

##### Students Completing MSIE at UA (Coursework Option)

- A minimum of 60 hours of graduate coursework
  - 30 hours count towards MSIE Coursework Option coursework requirements
    - Maximum of 3 credits of INEG 515V Individual Study in Industrial Engineering
  - 30 hours count towards Ph.D. coursework requirements
  - 42 of the 60 hours must be at the 5000+ level, with a minimum of 39 hours in the INEG department.
- A minimum of 30 hours of dissertation research credit (INEG 700V)

##### Students Not Completing MSIE at UA

- A minimum of 60 hours of graduate coursework

- 60 hours count towards Ph.D. coursework requirements
- 42 of the 60 hours must be at the 5000+ level, with a minimum of 39 hours in the INEG department.
- A minimum of 30 hours of dissertation research credit (INEG 700V)

#### 4.2.2 Regular Admit Ph.D. Students

Regular admit students holding Master's degree typically receive 24 hours of coursework credit and 6 hours of dissertation research credit towards their Ph.D. coursework requirements, per #3 above. Exceptions to this policy will be communicated to the student by the Chair of Graduate Studies. Therefore, regular admit students' remaining Ph.D. coursework requirements are as follows:

- A minimum of 30 hours of graduate coursework
  - 21 of the 30 hours must be at the 5000+ level, with a minimum of 18 hours in the INEG department.
- A minimum of 24 hours of dissertation research credit (INEG 700V)

#### 4.3 Ph.D. Degree Candidate Checklist

- [Doctoral Advisory Committee Report](#)
- [Doctoral Record of Progress](#)
- [Doctoral Dissertation Title](#)
- [Doctoral Dissertation Committee Report](#)
- [Guide to Theses/Dissertations](#)
- [Tax Guidelines for Graduate Students](#) (Taxation of Educational Grants)
- [Intellectual Property Disclosure Form](#)
- [Library Transmittal Form](#)
- [Dissertation Publishing Agreement Form](#)

*Dissertation Registration:* In addition to the dissertation hours requirements listed above, each student must register for at least one hour of dissertation each semester (including summer terms), after he/she has passed his candidacy exam until the work is completed.

*Final Dissertation Copies:* After the committee has approved the corrected work, two unbound copies complete with the abstracts and original signature sheets, must be presented to the Dean of the Graduate School, and one bound copy must be presented to the IE Graduate Program for placement in the Departmental Library. Students are also advised to give bound copies of their work to every member of his/her committee.

*Ph.D. Record of Progress:* Once the Graduate School has been notified of a student's final defense, the Record of Progress form is automatically sent to the major advisor.

The following sections of the Ph.D. Record of Progress form must be completed and signed by the major advisor:

**3. Report on Candidacy Examination.** If the Graduate School has not been informed of the date that the student passed the Ph.D. Qualifying Examination, please write in that date and sign on the signature line. If the Graduate School has already been informed, the date that the exam was completed will already be typed on the form and it will require the signature of the major advisor only.

**4. Title of Doctoral Dissertation.** Type or print the title of the dissertation. The major advisor must sign on the signature line.

**6. Final Examination.** Write in the date of the final exam. The major advisor must sign on the signature line.

At the bottom of the Record of Progress form are signature lines for the entire committee (including major advisor). Everyone who is listed as a member on the dissertation committee form must sign on these signature lines. Stamped signatures are not acceptable. Nor can anyone sign for anyone else.

Normally, the Record of Progress forms are signed at the student's final defense, as are the full signature pages and abstract approval pages in the dissertation. If a student has revisions to make or some other requirement to complete, the INEG department will hold the forms and/or the signature pages until the student has met all requirements.