

August 01, 2023

Dear Friend:

On behalf of the faculty and staff of the Department of Industrial & Manufacturing Systems Engineering, I welcome you to Kansas State University. You are joining a department with a proud tradition of excellence in graduate education. Our graduates are working successfully in industry and academia around the world. At times, it may seem like you will be in school forever, but I know that after graduation you will look back on your time at K-State with pride and wonder how you accomplished so much in so little time.

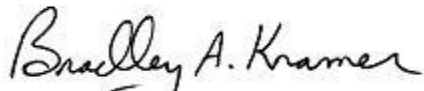
We have an outstanding faculty and staff and I believe that you will be glad that you chose to come here. We will do everything in our power to ensure that your efforts will be productive and that your hard work will lead to a successful career.

I want to challenge you to make the most of your opportunity to study with us. You should realize that the quality of your education is dependent on your investment of time and effort. A graduate education is more than just the courses that you take. Your teachers and your fellow students will be a great source of information and inspiration. Take advantage of every opportunity to participate in discussions, extracurricular activities, professional society organizations, intramurals, conferences and seminars. Attend the thesis defense presentations of your fellow students, make friends with people from different cultures and academic homes. Do not be content with doing the minimum possible, push yourself to higher levels - Strive to Excel.

You are now part of the K-State IMSE family! We are a group that includes captains of industry, academic leaders, and members in the National Academy of Engineering. We are proud of our past, and confident of our future.

This letter precedes our graduate handbook which contains information about our graduate programs. Please take time to read your copy carefully. If you have any questions, please know that my door is open to you. Simply make an appointment with our office staff.

Sincerely,

A handwritten signature in black ink that reads "Bradley A. Kramer". The signature is written in a cursive style with a large, prominent initial 'B'.

Bradley A. Kramer, Ph.D.
Professor and Department Head
Ike and Letty Evans Engineering Chair

**INDUSTRIAL & MANUFACTURING SYSTEMS ENGINEERING
KANSAS STATE UNIVERSITY**

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INTRODUCTION

This manual is designed to acquaint graduate students in Industrial & Manufacturing Systems Engineering (IMSE) with the policies and procedures dealing with graduate study in our department. Some parts of this manual have been summarized from information presented in the K-State Graduate Handbook and the K-State Graduate Catalog. This document, however, is not an attempt to reproduce the K-State Graduate Handbook. All K-State graduate students are bound to follow the rules published therein. You should be aware that rules concerning graduate study are dynamic and that the University requirements supersede departmental requirements. You may find a current version of the Graduate handbook at: <http://www.k-state.edu/grad/>.

GRADUATE PROGRAMS AND EXPECTED OUTCOMES

The IMSE department currently offers four graduate degrees: a Ph.D. in Industrial Engineering, Master of Science degrees in Industrial Engineering (MSIE) and Operations Research (MSOR) and the Master of Engineering Management (MEM). All three master's degrees offer a coursework only option. The MSIE and MSOR also have a thesis option. The MEM degree program is intended for working professionals who are part-time students taking courses online. The MEM program is not available to on-campus students.

The IMSE faculty have defined objectives for the graduate programs as follows. A student that completes one of these degrees should be able to:

1. solve advanced engineering problems using discipline appropriate math, science, computation and analysis skills.
2. synthesize and evaluate information.
3. demonstrate advanced knowledge in the area of specialization.
4. (a) recognize and apply the state of the art techniques in the field (M.S. coursework option).
(b) plan and conduct scholarly activities (M.S. thesis option).
(c) plan and conduct scholarly activities that make original contributions to the knowledge base in the field of study (Ph.D. degree).
5. communicate effectively both in written and oral forms.
6. recognize the need for and commit to engage in life-long learning and professional service.
7. be effective in leadership and collaboration (MEM).

BASIC TERMS AND REQUIREMENTS

Each graduate degree is uniquely tailored to the student's needs. As an undergraduate, you followed a specific curriculum that all the students in your major followed to earn the baccalaureate degree. As a graduate student, the set of courses that you will take will be a combination of courses that you need to broaden and deepen your background in the field and courses that help you to develop new skills and acquire information to conduct your research. This set of courses is called the **Program of Study**. It is determined by the student during their first semester as a graduate student with the advice of a **Major Professor** and the concurrence of a **Supervisory Committee**. The program of study documents both the courses that the student will take to complete the degree and the student's supervisory committee. The program of study is effectively a contract between the university and the student that details what must be completed in order to earn the degree and who will officially represent the university to make sure the student has completed all requirements. The program of study must be documented on an official university form available from the Graduate School web page, signed by the student and supervisory committee and filed with the graduate school. The program of study must meet all graduate school rules and follow one of the department's approved graduate programs detailed later in this document. The program of study should be submitted to the graduate school prior to the student enrolling for their second semester in the program.

Your **Major Professor** is an IMSE graduate faculty member who consents to supervise and examine your work. All graduate students must choose a major professor during their first semester at K-State. This professor will supervise your research work and advise you in developing a program of study. The major professor is the one

who determines when your work is complete and ready to be taken to the supervisory committee for ***Final Examination***.

The ***Supervisory Committee*** is formed in consultation with the major professor. It is formed during the development of the Program of Study. Its purpose is to supervise the student's academic work and to conduct the final examination of the student.

Every graduate student is required to pass a ***Final Examination***. The purpose of the final examination is to assess the quality of the student's work to determine whether the student should graduate. The student's supervisory committee conducts the final examination. All students, who complete a thesis, will defend their work before their supervisory committee. This examination may include questions related to their mastery of their field and/or program of study.

The final examination for students who take a course-work only option requires the student to present a culminating experience to the student's supervisory committee. The purpose of this experience is to determine that the student can integrate materials from various classes to solve real-world problems. More information is provided in the section on the master's Degree.

Registration - Each on-campus graduate student must meet with their major professor prior to enrolling. If the student does not have a major professor yet, they will be assigned an initial advisor with whom they must meet.

Each on-campus graduate student enrolled in 6 or more graduate credit hours must enroll for ***IMSE 892 - Graduate Seminar*** (0 credit hours) each semester. Seminar attendance requirements will be clearly detailed each semester during the first scheduled seminar by the faculty member in charge of the seminar. Unexcused absences from seminar or failure to complete all seminar requirements must be made up by work assigned by the faculty member responsible for the seminar. Graduate students who conduct research projects are encouraged to make one technical presentation to the seminar group during their time at K-State.

Outside coursework - In order to obtain a master's degree in the IMSE Department, no more than 6 credits can be taken outside the IMSE Department. Prior approval by the student's major professor must be obtained if extra course-work outside the IMSE Department is appropriate for the student's professional goals.

Annual Progress Review - All IMSE graduate students are required to complete an annual progress review, as per the K-State Graduate Handbook Chapter 1.E (<http://www.k-state.edu/grad/graduate-handbook/>). The review's purpose is to support timely degree completion and professional development. In the case of funded students, the review also is submitted to the Department Head to support decisions about GRA and GTA positions for the upcoming year. Reviews will be maintained by the IMSE Department as part of the student's academic record.

All Ph.D. students, MS students who received any funding (from the IMSE Department or on an IMSE faculty member's project) in the previous academic year, and MS students who wish to be considered for funding in the upcoming academic year should complete the review form *Annual Progress Report for Doctoral Students and Funded Master Students*.

MEM, MSOR, and MSIE students who received no funding from the IMSE Department or an IMSE faculty member's project in the previous year and who do not wish to be considered for funding in the upcoming year should complete the review form entitled, *Annual Progress Report for Non-Funded Master Students*.

Review process:

1. First week of April: IMSE Department notifies each graduate student by email that annual reviews are due and provides a link to the review forms.
2. On or before April 15: Student completes and submits the self-evaluation portion of the form.

- a. Annual Progress Report for Doctoral Students and Funded Master Students is submitted to the student's major professor.
 - b. Annual Progress Report for Non-Funded Master Students is submitted to IMSE_GradProgress@K-State.edu.
3. On or before May 15: The student's major professor reviews the form, provides comments to the student, completes the major professor evaluation portions of the form, files the completed form with the IMSE Department, and provides a copy to the student.
 4. A student who does not complete the annual review in a timely manner will have an enrollment hold placed on their account, and the major professor will report that the student has failed to make satisfactory process toward the degree. A completed report and consultation with the major professor are required to remove the hold.

Responsible Conduct of Research Training (RCR) – All graduate students working on research (at the MS and Ph.D. level) are required to take the RCR training course during their first semester. Once completed, each student should submit the certificate of completion to their research supervisor.

The course can be found at: <http://www.k-state.edu/comply/rcr/training/>

Family Educational Rights and Privacy Act (FERPA) – All students who take on Graduate Teaching Assistantship (GTA) or other instructional/grading assignments must annually complete University FERPA training. The links to the training will be provided to you when its time to begin your position.

MASTER'S DEGREE

The master's degree is awarded to one who has developed a mastery of basic principles and concepts. The graduate understands these theories to the point of being able to apply them to new situations and different application areas.

There are two different routes to obtain a master's degree:

- 1) Graduate courses + Thesis
- 2) Graduate Courses Only

Those students who work on an assistantship in the department will be expected to complete a thesis. Also, those students who think they may eventually want to work toward a Ph.D. are encouraged to do the thesis option. The thesis is an original work. It builds on what has already been done in the field and presents something original and valuable. It must be technically and scientifically sound. A hypothesis is posed, experiments planned, data obtained and analyzed, and results and conclusions reported. The coursework only option is useful to gain a mastery of current information in the field without developing independent research capability.

Required Graduate IE Coursework – Each of the three masters' degrees has a set of core courses. A student may not graduate with more than one C in a core course. This may require some students to repeat courses. Graduate students should further note that they must request and be granted permission to retake a class. Please refer to graduate school policy for further information.

ENTRANCE REQUIREMENTS

To be considered for admission, the applicant must satisfy the following requirements. Any exception must be approved by the Graduate Committee.

- (1) A baccalaureate degree in disciplines as specified for the applicant's chosen degree program.
- (2) An undergraduate/graduate grade point average of 3.0/4.0 or better (or equivalent).

The applicant must supply:

- (1) A completed graduate application form

- (2) Three letters of reference
- (3) Official transcripts from all institutions at which the applicant studied
- (4) A statement of objectives for graduate study
- (5) International students who have not obtained a baccalaureate or graduate degree from a U.S. institution and whose primary language is not English must have a TOEFL score that satisfies the Graduate School requirements.
- (6) All international student applicants must also provide a completed Affidavit of Financial Support with documentation.

PREREQUISITE KNOWLEDGE

- (1) Expectations regarding prerequisite knowledge for each master's degree program are listed with the respective program requirements.
- (2) It is the student's responsibility to acquire prerequisite knowledge. The student should speak with an advisor to determine an appropriate course of action. Any makeup or prerequisite courses should be taken for undergraduate credit and will not affect the student's graduate GPA.
- (3) Any additional makeup courses will be decided by the graduate program coordinator, department head, and/or major professor with policy recommendations from the graduate committee.
- (4) Make-up courses should be taken during the first year of study. Successful completion of make-up courses is a requirement for achieving satisfactory academic progress.

MAJOR PROFESSOR AND SUPERVISORY COMMITTEE

Every graduate student works under the supervision of a major professor and a supervisory committee. Department guidelines for establishing a supervisory committee follow. This supervisory committee must be composed of the major professor and at least two other graduate faculty members. Every supervisory committee includes at least one tenured IMSE faculty member.

For thesis students.

The first step is to identify/recruit an IMSE graduate faculty member to serve as the student's major professor. Students should know that faculty members are not obligated to take any particular student on as their student. The major professor role takes a lot of time and effort so faculty members want to make sure that any research relationship they establish will be productive. Students should discuss their research interests with members of the faculty and with mutual agreement choose a major professor prior to beginning their second semester in the program.

The major professor will help the student identify other members of the supervisory committee. Members are chosen to provide valuable knowledge and experience to the research project and to examine the quality of the student's work. The supervisory committee should be identified and documented in the student's official Program of Study before being allowed to enroll for the second semester in the program. For thesis students, at least two members of the supervisory committee must be graduate faculty members from the IMSE department.

For coursework only students.

Each coursework only degree has a default major professor, and supervisory committee members are to be selected from among the eligible IMSE graduate faculty listed here. Students may request that any eligible IMSE graduate faculty member for the corresponding degree program serve as their major professor in lieu of the default faculty member.

MSOR:

Default major professor: Dr. Chih-Hang Wu

Eligible supervisory committee members: Drs. Jessica Heier Stamm, Michael Helwig, Bradley Kramer, and Chih-Hang Wu

MSIE:

Default major professor: Dr. Shuting Lei

Eligible supervisory committee members: Drs. Suprem Das, Jessica Heier Stamm, Michael Helwig, Bradley Kramer, Shuting Lei, and Meng Zhang

MEM:

Default major professor: Dr. Bradley Kramer

Eligible supervisory committee members: Drs. Deandra Cassone, Shing Chang, Michael Helwig, Bradley Kramer, and Margaret Rys

PROGRAM OF STUDY

Every graduate student should file a program of study prior to completing their third graduate course. The Program of Study documents both the courses that the student will take to earn the degree and the group of faculty who will supervise their work. Guidelines for choosing courses for the program of study are provided by degree program on the following pages. Your major professor will help you define your program of study.

THESIS OR COURSEWORK OPTIONS

The Program of Study for each student must meet IMSE program guidelines and graduate school policies. Students must earn 60% or more of their credit hours in courses numbered 700 or higher. No more than three hours in problems or other individualized courses may be applied to the master's degree.

The IMSE Department has two options for students to earn the Master of Science degrees in Industrial Engineering or Operations Research: Thesis Option or Coursework Only Option. Students in the Master of Engineering Management can only pursue a Coursework Only plan. Each IMSE master's degree requires the student to complete at least 30 graduate credit hours.

(1) Thesis option: The student will complete a research project that is documented by a thesis for 6 credit hours as part of their Program of Study.

(2) Coursework option: The student's degree program will consist of coursework only, but it will include evidence of advanced work, such as term papers or designs, as determined by the committee.

FINAL EXAMINATION

A final examination is required for the M.S. degree. The examination will be administered after the student has completed the program of study and other requirements or in the term in which the candidate intends to complete them. All students are welcome to take their final examination on campus.

If the student takes the thesis option, an oral examination will be conducted on the thesis. Some of the guidelines for this oral examination are listed in the following:

- (a) The ideal presentation time is 20 to 30 minutes and certainly should not be more than 40 minutes. The primary purpose of the examination is to present the research value and defend its value.
- (b) The examination is divided into three parts:
 - (1) The first part is an oral presentation by the graduate student. This portion of the exam is open to the public. Questions from the general audience are allowed.
 - (2) During the second part, only the committee members and the candidate should be present. The public audience is excused. The committee will examine the candidate in more depth.
 - (3) The third part of the exam is the deliberation by the committee members to render judgment on the quality of the work. Only the committee members should be present.
- (c) The committee may decide to pass or fail the student. Negative votes by half or more of the members of a supervisory committee constitute failure. A candidate who fails a master's examination may take

a second examination no sooner than two months or later than 15 months after the failure, unless an extension is granted by the Dean of the Graduate School. No third trial is allowed.

For students taking the course work option, the students must present a culminating experience to the student's supervisory committee. The purpose of this experience is to determine that the student can integrate materials from various classes to solve real-world problems. At least two members of the student's supervisory committee must be present at this presentation. Any supervisory committee member not present will evaluate the work based upon the slides from the presentation and the recommendation of the attending graduate faculty members.

Coursework Only students should prepare a presentation on a real-world problem where they have applied the knowledge gained from their courses. This 15-20 minute presentation should describe the problem, why it is important to solve and the avenues the student pursued to solve the problem. A successful presentation should integrate knowledge from at least 3 classes on the student's program of study. This presentation should also show that the student has mastery of both the material and the application of the material from these courses.

OTHER REQUIREMENTS AND PROCEDURES FOR A MASTER'S DEGREE

- (1) Upon arriving at the university, report to the IMSE department office for directions from the IMSE graduate coordinator.
- (2) Each student should attend the university graduate student orientation and the department's graduate student orientation.
- (3) Each on-campus student must consult with an advisor prior to enrollment. Students who are sponsored by a faculty member or have already chosen a major professor will consult with this individual for advice on classes in which they should enroll. Students who do not have a major professor will consult with Dr. Chih-Hang Wu (MSOR), Dr. Shuting Lei (MSIE), or Dr. Bradley Kramer (MEM) to determine the courses in which they should enroll.
- (4) A supervisory committee must be formed for each student as detailed in the previous section. The student should work with their major professor to form this committee before being allowed to enroll for the second semester.
- (5) Each student must file a program of study before enrolling for the third semester.
- (6) Students may change their major professor. The change must be approved in writing by both the current and the new major professors. (Program/Committee Change Form)
- (7) To obtain an M.S. degree, at least 60% of the graduate courses on the Program of Study must be at or above 700 level and no more than 6 credits may be at the 500 level. All 500 level courses must be approved by the student's supervisory committee. These are graduate school requirements.
- (8) Enrollment in IMSE 892 - Graduate Seminar (0) is required each semester for on-campus graduate students enrolled in 6 or more graduate credit hours. Unexcused absences from the seminar course must be made up by work to be assigned by the instructor. M.S. students obtaining a thesis are encouraged to make at least one technical presentation to the graduate seminar prior to graduation. This course should be listed in the student's Program of Study.
- (9) All graduate students must pass a final examination and must have a 3.0 cumulative GPA average or better in their course work.
- (10) A letter of recommendation for practical training will NOT be written for international students before the student's oral defense has been scheduled.
- (11) Students completing a thesis are required to prepare an email announcement including the thesis title and date, time, and location for the final examination. This announcement is to be sent to imse@ksu.edu at least two weeks before the final examination and will be distributed to the department's faculty and graduate students.
- (12) Students completing a thesis are required to prepare a poster to summarize their research and to be displayed in the IMSE Department before their final thesis document is approved. This poster must be approved by the major professor.
- (13) After the student successfully passes the final examination, they must submit their M.S. thesis to the graduate school within three months of the examination.

GRADUATE SCHOOL REQUIREMENTS

In addition to the requirements listed here, the student must also satisfy all the requirements of the graduate school to obtain a master's degree.

MASTER'S DEGREE PROGRAM FORMAT AND MINIMUM REQUIREMENTS

Program guidelines for each of our master's degree programs follow.

KANSAS STATE UNIVERSITY
DEPARTMENT OF INDUSTRIAL & MANUFACTURING SYSTEMS ENGINEERING
Master of Science - INDUSTRIAL ENGINEERING
 Program Format and Minimum Requirements*

To pursue the Industrial Engineering M.S. through the Industrial and Manufacturing Systems Engineering graduate program, students must meet the K-State Graduate School admissions requirements, hold a B.S. degree in engineering, mathematics, or physical science and be versed in several of the basic areas of industrial engineering. Non-industrial engineering undergraduates may require 6 semester credit hours of prerequisite courses.

An entering M.S.I.E. student is expected to have proficiency in computer programming, linear programming, and statistics. Students failing to meet these expectations may be required to take some prerequisite courses.

The formats for this program are as follows. *

	Thesis	Coursework
Core Courses	9 (12)	9 (12)
Other IMSE Courses and Electives	(12) 15	(18) 21
Thesis	6	0
Graduate Seminar **	0	0
TOTAL GRADUATE CREDITS	30	30

Core Courses and Policies

- IMSE 641 – Statistical Process Control in Manufacturing
- IMSE 811 – Advanced Production & Inventory Control
- IMSE 780 – Methods of Operations Research or two of the following classes:
 - IMSE 710 – Transportation Logistics
 - IMSE 751 – Normative Theory of Decisions and Games
 - IMSE 752 – Multiple Criteria Decision Analysis
 - IMSE 760 – Stochastic Calculus Financial Engineering
 - IMSE 810 – Industrial Logistics Engineering
 - IMSE 865 – Simulation of Industrial Management Systems
 - IMSE 866 – Applied Stochastic Processes and Theoretical Simulation
 - IMSE 867 – Stochastic Programming
 - IMSE 881 – Linear Programming
 - IMSE 882 – Network Flows and Graph Theory
 - IMSE 884 – Integer Programming and Combinatorial Optimization
 - IMSE 982 – Nonlinear Programming

To graduate, a student may receive at most one C in all of the core courses (no Ds or Fs are allowed). This may require some students to retake core courses.

- * Actual degree requirements will be summarized on an approved plan of study. Some general guidelines include:
 - At least 60 percent of classes must be above the 700 level.
 - No more than 6 hours can be taken from an outside department without prior permission.
 - Courses in the IMSE department must be above the 600 level.
 - Courses outside the department must be above the 500 level.
 - No more than 6 hours can be taken at the 500 level.

** All on-campus students who are enrolled in 6 or more graduate credit hours are required to enroll in the graduate seminar (IMSE 892) each semester.

KANSAS STATE UNIVERSITY
DEPARTMENT OF INDUSTRIAL & MANUFACTURING SYSTEMS ENGINEERING
Master of Science in OPERATIONS RESEARCH
 Program Format and Minimum Requirements*

To pursue the Operations Research M.S. through the Industrial and Manufacturing Systems Engineering graduate program, the student must meet the K-State Graduate School admissions requirements, have a baccalaureate degree, and have a strong background in applied mathematics including calculus and linear algebra. The student must also have completed 3 semester credits each in introductory statistics (equivalent to K-State's STAT 510) and introductory operations research and (equivalent to K-State's IMSE 560 or IMSE 680)⁺, and have knowledge of computer programming (equivalent to K-State's CIS 200 or CIS 209). Otherwise, appropriate remedial courses will be required. GRE scores are required for all students who apply unless they will have completed an undergraduate degree from an ABET-accredited program.

⁺If an entering student has not taken an introductory operations research course, the student should enroll in IMSE 680 - Quantitative Problem Solving Techniques, to gain this knowledge.

The formats for this program are as follows:*

	Thesis	Coursework
Operations Research Core Courses	9	9
Additional Operations Research Courses	3	9
Electives	12	12
Thesis	6	0
Graduate Seminar **	0	0
TOTAL GRADUATE CREDITS	30	30

One core course must be taken in each of the three areas:

Continuous Optimization:

IMSE 881 – Linear Programming

IMSE 982 – Nonlinear Programming

Discrete Optimization:

IMSE 882 – Network Flows and Graph Theory

IMSE 884 – Integer Programming and Combinatorial Optimization

Stochastic Processes:

IMSE 865 – Simulation of Industrial Management Systems

IMSE 866 – Applied Stochastic Processes and Theoretical Simulation

IMSE 867 – Stochastic Programming

Additional Operations Research courses include the following courses and any core courses:

IMSE 643 – Industrial Simulation

IMSE 710 – Transportation Logistics

IMSE 751 – Normative Theory of Decisions and Games

IMSE 752 – Multiple Criteria Decision Analysis

IMSE 760 – Stochastic Calculus Financial Engineering

IMSE 780 – Methods of Operations Research

IMSE 810 – Industrial Logistics Engineering

IMSE 990 – Adv Topics in Operations Research

* Actual degree requirements will be summarized on an approved plan of study. Some guidelines include:

At least 60 percent of classes must be above 700 level.

No more than 6 hours can be taken from outside the department without prior permission.

Courses in IMSE the department must be above the 600 level.

Courses outside the department must be above the 500 level.

No more than 6 hours can be taken at the 500 level.

No course can count as both a core course and an additional operations research course.

** All on-campus students who are enrolled in 6 or more graduate credit hours are required to enroll in the graduate seminar (IMSE 892) each semester.

KANSAS STATE UNIVERSITY
DEPARTMENT OF INDUSTRIAL & MANUFACTURING SYSTEMS ENGINEERING
Master of ENGINEERING MANAGEMENT
Program Format and Minimum Requirements*

To pursue the MEM degree, the student must meet the K-State Graduate School admissions requirements, have a B.S. degree in engineering, mathematics, or physical science and have taken at least one course each in calculus and statistics.

Master of Engineering Management is an online program only. This program is designed to be a part-time program and typically requires 2 to 4 years to complete.

Students not meeting the above requirements may be considered if they can demonstrate equivalent evidence of an appropriate background. Contact the Department of Industrial and Manufacturing Systems Engineering to discuss.

The format for this program is as follows: *

	Coursework
Core Courses (any 5 of the 6 core courses)	15
Electives *	15
TOTAL GRADUATE CREDITS	30

Core Courses (each offered once every three years):

- IMSE 605 – Advanced Industrial Management
- IMSE 680 – Quantitative Problem Solving Methods
- IMSE 710 – Transportation Logistics
- IMSE 806 – Engineering Project Management
- IMSE 811 – Advanced Production and Inventory Control
- IMSE 822 – Advanced Engineering Economy

Besides the above academic requirements, a graduating student must have at least 3 years full-time work experience.

Elective Courses

Electives are any course not utilized as a core course on your program of study. Students should work with their major professor to choose elective courses that support their professional development goals.

- *Actual degree requirements will be summarized on an approved plan of study. Some general guidelines include:
- At least 60 percent of classes must be above the 700 level
- At most 6 hours can be transferred from another school without prior permission.
- No more than 6 hours can be taken from an outside department without prior permission.
- Courses in the IMSE department must be above the 600 level.
- Courses outside the department must be above the 500 level.
- No more than 6 hours can be taken at the 500 level.

THE DOCTORAL DEGREE

The doctoral degree is awarded to those individuals who go beyond mastery of current industrial engineering principles and applications to being able to identify valuable research areas, determine a plan to accomplish the research, and can direct others to accomplish these research projects. The Ph.D. is the highest degree awarded in this field and is only granted to those with an exceptional understanding of industrial engineering and an ability to envision needed changes to the profession and direct efforts to develop new tools and applications, to teach others the field, and to validate the use of these tools and applications.

ADMISSION

To gain admission to the graduate school, the student must be approved for admission both by the graduate school and the IMSE department. All complete applications for admission to our Ph.D. program are reviewed by the department's graduate committee. Furthermore, admission to graduate school does not imply admission to candidacy for a Ph.D. degree. Candidacy is confirmed only upon the successful completion of the preliminary examination.

ENTRANCE REQUIREMENTS

Students who majored in engineering, computer science, natural sciences and mathematics may be considered for admission. Any exceptions must be approved by the Graduate Committee. The basic requirements for being considered for admission are:

- (1) A Bachelor of Science degree in engineering, math, statistics, computer science or science.
- (2) Adequate preparation in the proposed major area of study.
- (3) A graduate grade point average of 3.5 or better out of possible 4.0.
- (4) Students who do not have at least one degree in industrial or manufacturing engineering may be required to take additional courses in order to pass the preliminary examination.

To document that these requirements have been met, the applicant must meet all entrance requirements as stated by the Kansas State University Graduate School and supply:

- (1) A completed application form for admission to graduate school
- (2) Three letters of references
- (3) Transcripts from all institutions at which the applicant studied
- (4) A statement of purpose for pursuing a Ph.D. degree.
- (5) An official GRE exam report directly from ETS.
- (6) International students who have not obtained a degree from a U.S. institution and whose native language is not English must have a TOEFL score that satisfies the K-State graduate school requirements for direct admission into the program. There are additional English Language requirements for students who will serve as a Graduate Teaching Assistant (GTA) detailed in the Graduate School webpage.
- (7) International student applicants must provide a completed Affidavit of Financial Support with documentation.

PH.D. MAKEUP AND CORE COURSES

If the Ph.D. applicant did not major in industrial engineering for either the baccalaureate degree or master's degree or whose major field does not include the required undergraduate courses, the student may be required to take some make-up courses based upon either the recommendations of the major professor, the Graduate Committee Chairperson, or the Department Head. A grade of "B" or better must be obtained for these make-up courses. If student does not successfully complete a prerequisite course, the student must enroll in the same course the next semester. If on the second try the student does not receive a "B" or better, the student is dismissed from the program.

Breadth Requirements:

The field of industrial engineering is broad. To assure that each student obtains a broad understanding of industrial engineering, each student must take at least one class in five of the seven core areas. In each of the student's core courses, the student must receive a grade of "B" or better. This may require taking courses more than one time.

- Optimization: IMSE 780, IMSE 881, IMSE 882
- Stochastic Systems: IMSE 865, IMSE 866, IMSE 867
- Applied Data Analysis: IMSE 841, STAT 713
- Supply Chain Engineering: IMSE 710, IMSE 811
- Decision Theory: IMSE 751, IMSE 752, IMSE 822
- Ergonomics: IMSE 850
- Manufacturing: IMSE 825, IMSE 868

PROGRAM OF STUDY

The Ph.D. degree requires at least three years of full-time study beyond the bachelor's degree, equivalent to at least 90 semester hours, including a dissertation equivalent to 30 or more hours of research credits. An earned M.S. degree in an appropriate field from an approved institution can be used in lieu of thirty hours of credit in the program of study.

- (1) Each student must choose a major professor before beginning their second semester at K-State. However, it is in the student's best interest to decide as early as possible. The major professor must be both a member of the K-State Graduate Faculty and Certified to Direct Doctoral Students.
- (2) Each student must file the Graduate School Program of Study before the end of their second semester at K-State.
- (3) Until the student chooses a major professor, the student will be assigned an initial advisor
- (4) The student must meet with their major professor/advisor prior to enrolling each semester.
- (5) The student, with the advice of their major professor, will choose at least 2 additional members (not including the major professor) for the Supervisory Committee. At least one member must be from outside the IMSE department. The Department Head will select one IMSE faculty member to be on the student's Supervisory Committee. All Supervisory Committees must include at least one tenured IMSE faculty member.
- (6) The Supervisory Committee should be actively engaged in the student's research. Each year the student must present a written report to each committee member detailing the year's research achievements. Alternately, a published paper can be given to the research committee in place of this report.
- (7) A student may change their major professor, provided the student obtains the agreement of both the current and the new major professors in writing (Program/Committee Change Form).
- (8) Enrollment in IMSE 892 – Graduate Seminar (0) is required each semester for all on-campus graduate students enrolled in 6 or more graduate credit hours. Unexcused absences from the seminar course must be made-up by work assigned by the course instructor. This course should be listed in the student's Program of Study.

QUALIFYING AND PRELIMINARY EXAMINATIONS

It is recommended that the qualifying examination be taken about 2 years after enrollment in the IMSE department. This time should allow the student to have taken all necessary courses and have a fundamental understanding of how to perform successful research.

The student must complete a qualifying exam to be eligible to take the preliminary examination. Successful completion of the qualifying exam is required before the student can take the official preliminary exam. The preliminary examination must be completed at least seven months before the final examination.

It is highly recommended that the student decide at least one semester in advance to take the qualifying exam. This decision must have the concurrence of the student's major professor and the student must fill out the proper Graduate School forms. The student should notify the department head of their intention to take the preliminary examination at least eight weeks prior to the test date. The qualifying exam will begin about one month after fall or spring classes begin.

The purpose of both the qualifying and preliminary examination is to verify that a student is capable of performing quality research in the chosen field. The qualifying exam tests the student's ability to perform research in the chosen field. The preliminary exam is a proposal of the student's Ph.D. dissertation research that includes a plan on how the student will complete the research.

Qualifying Exam

The Qualifying Exam tests the student's ability to perform research in their chosen area. The student selects one of the following five areas:

- Deterministic Optimization: IMSE 881, IMSE 882, IMSE 884, IMSE 982
- Stochastic Systems: IMSE 865, IMSE 866, IMSE 867, IMSE 971
- Applied Data Analysis: IMSE 785, IMSE 841, IMSE 850, STAT 713, STAT 720, STAT 722
- Quantitative Production Models: IMSE 881, IMSE 882, IMSE 751, IMSE 991, IMSE 810, IMSE 811
- Manufacturing: IMSE 825, IMSE 868

The student selects one of the five areas and the supervisory/examining committee prepares three research-oriented questions that relate to this area from topics related to the classes listed in each area above. These questions should not be directly related to the student's Ph.D. research.

The student selects one of the questions and has between two and five weeks to prepare a written response. This response should include a review of the existing literature and a description of how to solve the research problem. The student should anticipate preparing a solution to the problems in a proper research format (either a journal article style or an NSF research grant style). Two weeks after submitting the written report to the Supervisory Committee, the student will present an oral defense of the work.

Upon conclusion of the oral defense, the committee will decide whether or not the student passed the qualifying exam. A failure is considered a failure of the Qualifying Exam. The student, with approval from the Supervisory Committee, may take the exam a second time. This retake must be completed during the next fall or spring semester. A third retake is not allowed. If the student passes the qualifying exam, the student continues to the preliminary exam.

Preliminary Exam - Dissertation Proposal

A student will normally complete the Preliminary exam about one year after successfully completing the qualifying exam. The student must submit an official request to the graduate school to take the Preliminary Exam. This exam consists of the student presenting and defending their proposed Ph.D. dissertation research to the Supervisory Committee. The student outlines their research topic in writing; the NSF proposal format is recommended. This document must be submitted to the Supervisory Committee at least one week before the oral defense. During the oral defense, committee members can examine the hypothesis, feasibility, depth, methods, and other details based on the presentation and the written proposal.

If the proposal does not satisfy the Supervisory Committee, then the student fails the Preliminary Exam. The student, with approval from the Supervisory Committee, may take the exam a second time. This retake must be completed during the next fall or spring semester. There is no opportunity for a third retake.

A student is considered a **candidate** for the Ph.D. in Industrial Engineering when they pass the Preliminary Exam. The supervisory committee may suggest additional courses for the candidate to complete or other avenues of research to pursue as a result of the Preliminary Exam.

DISSERTATION

A doctoral candidate must complete a dissertation. A critical aspect of a Ph.D. degree is publication. Every student must submit **at least two papers** related to the student's Ph.D. research to scholarly journals prior to their being allowed to schedule their final defense. These submissions must meet the approval of the student's major professor.

FINAL EXAMINATION

A final examination (dissertation defense) is required for the Ph.D. degree. The examination will be administered after the student has completed the program of study and other requirements or in the term in which the candidate intends to complete them. The oral examination will be conducted on the thesis. Its purpose is to test the student's research work. . Students must turn in their dissertation within three months of their final examination date.

Some of the guidelines for this oral examination are listed in the following:

- (1) The ideal presentation time is 20 to 30 minutes and certainly should not be more than 40 minutes. The primary purpose of the examination is to present the research contribution and defend its value.
- (2) The examination is divided into three parts:
 - a. The first part is an oral presentation by the graduate student. This portion of the exam is open to the public. Questions from the general audience are allowed.
 - b. During the second part, the public audience is excused. Only the committee members and the candidate should be present. The committee will examine the candidate in more depth.
 - c. The third part of the exam is the deliberation by the committee members to render judgment on the quality of the work. Only the committee members should be present.
- (3) The committee may decide to pass, pass with qualification, or fail the student. Negative votes by half or more of the members of a supervisory committee constitute failure. A candidate who fails a Ph.D.'s examination may take a second examination no sooner than two months or later than 15 months after the failure, unless an extension is granted by the Dean of the Graduate School. No third trial is allowed.

Students approaching their final examination are required to prepare an email announcement including the dissertation title and date, time, and location for the final examination. This announcement is to be sent to imse@ksu.edu at least two weeks before the final examination and will be distributed to the department's faculty and graduate students.

Each student must prepare a poster to summarize their research and to be displayed in the IMSE Department before their final dissertation document is approved. This poster must be approved by the major professor.

GRADUATE SCHOOL REQUIREMENTS

In addition to the requirements listed here, the student must also satisfy all the requirements of the graduate school to obtain a Ph.D. degree.

PH.D. PROGRAM FORMAT AND MINIMUM REQUIREMENTS

The requirements and program format for the Ph.D. degree is summarized on the following page.

KANSAS STATE UNIVERSITY
DEPARTMENT OF INDUSTRIAL & MANUFACTURING SYSTEMS ENGINEERING
Doctor of Philosophy
Program Format and Minimum Requirements♦

Admission to the Ph.D. program in the Department of Industrial Engineering is based on a vote of the departmental graduate faculty. Decisions concerning financial assistance are the responsibility of the Department Head.

With an MS degree	Hours	Without an MS degree	Hours
One class each from 5 of the core areas	15**	One class each from 5 of the core areas	15**
Maximum credit for MS	30	Additional graded courses	24
Additional credit hours	15	Additional credit hours	21
Ph.D. research hours	<u>30</u>	Ph.D. research hours	<u>30</u>
Total graduate credit hours	90*	Total graduate credit hours	90*

Additional graded courses must be courses that are awarded a letter grade.

Additional credit hours can be graded courses or taken for credit/no credit such as Ph.D. research.

If the Graduate School approves less than 30 hours of credit for an MS degree, then the remainder of the 30 hours (up to a maximum of 24 hours) must be taken as additional graded courses.

*All on-campus students who are enrolled in 6 or more graduate credit hours are required to enroll in the graduate seminar (IMSE 892) each semester.

**A student may satisfy a core course requirement by passing an examination. In such a situation, the student may take an additional 3 hours of graduate graded courses in place of a core course.

FINANCIAL AID

To facilitate research work, the IMSE Department provides financial aid to selected graduate students in the form of teaching and research assistantships. Financial aid decisions are made separately from the admission decisions. The department priority is to fund Ph.D. students.

Assistantships are not grants. Students who are awarded an assistantship must do their work. Failure to perform will result in a loss of the assistantship. To maintain an assistantship requires that the student make significant academic progress toward graduation each semester and that the student satisfies the work requirements specified by their supervisor.

Graduate assistants are employees of the university. In addition to your assistantship, out-of-state students receive tuition reductions of approximately \$2400 per semester, which averages out to about \$550 per month. Normally graduate assistants on a 4-tenths appointment are responsible for 16 hours work per week; graduate assistants on a 5-tenths appointment are responsible for 20 hours per week. This time should be spent helping your supervisor with any academic tasks they may want done (library work, lab supervision, grading papers, running experiments, etc.)

Graduate Teaching Assistants (GTAs) and Graduate Research Assistants (GRAs) on a 5-tenths appointment are eligible for health insurance benefits.

Your assistantship is contingent on both good work performance and good grades. Your work performance will be evaluated each semester by your supervisor (not necessarily your major professor). Based on the supervisor's evaluation, your rate of pay may be adjusted upward or downward. Your assistantship may be discontinued if:

- (a) The student's supervisor gives the student a poor evaluation
- (b) The student makes C or lower grades in any class
- (c) The student withdraws from classes
- (d) The student does not accomplish research to the satisfaction of their supervisor

Failure to comply with these requirements will result in a reduction in your assistantship. If you work at some other job on campus to earn extra money (e.g., at the Union) it must be limited to five hours per week.

Assistantships may be funded by either the department or a sponsored project. The Department Head determines which students will be put on departmental support and makes out the work assignments each semester. Each student on departmental support will be assigned to a faculty member to support our educational programs. This assignment will be for 16-20 hours/week. You will be expected to assist your supervisor in teaching their course(s) in areas such as: monitoring a laboratory, grading, running experiments, gathering resource materials, serving as a teaching assistant, etc. The balance of your assignment will be spent working to support our research mission by assisting your assigned faculty member with their research needs. These assignments could include helping with instruction as noted before or include library work, running experiments, critiquing papers, analyzing data, programming, writing research proposals, or summarizing research results.

When a faculty member successfully earns a grant from a funding agency to support graduate students, they are free to decide which graduate students they would like to support on the grant. A decision to support a student for one semester is not a guarantee of support throughout the student's educational program. The faculty member who earned a grant is responsible for accomplishing the research specified in the proposal. If the work is not accomplished for whatever reason or the funds are pulled from the project, the student may lose their assistantship. The student must realize that significant work must be accomplished every semester in order for the project to be successful. The department cannot commit to support every student who is dropped from a sponsored project.

Loss of assistantship: Students may lose their assistantship if they fail to accomplish their assigned work or if they fail to make significant progress. Those students on departmental support will be evaluated at the end of each semester to determine whether the assistantship will be continued. Students on a funded project will be continually

evaluated by the supervisor. If a student is not working well or progressing academically, they will be warned in writing that they are in danger of losing their assistantship. If the situation does not improve immediately, they will lose their assistantship.

Vacation Leave: Graduate students appointed as Research Assistants (GRA) or Teaching Assistants (GTA) do not earn paid leave. Students are paid for their work on campus and are not paid during vacation, travel home, or any other leave not related to their work. GRAs should consult with their research supervisor prior to any travel away from campus while they are on support. Each individual on a GRA or GTA appointment who will not be on campus during periods when the university is open must notify the IMSE office and their faculty supervisor.

ASSISTANTSHIP RULES

The following rules apply to graduate students on support.

- (1) All graduate students on an assistantship must complete a thesis or dissertation. Students who discontinue a research track will be taken off of assistantship support.
- (2) Students on assistantships are normally required to work 16 hours work per week (.4 appointment) or 20 hours work per week (.5 appointment). This time will be spent helping the student's supervisor (not necessarily the student's major professor). Tasks may include research, library work, lab supervision, grading papers, etc.
- (3) The maximum number of graduate credit hours a student can take while on a .4 appointment is 12 graduate credit hours and on a .5 appointment is 10 graduate credit hours. Exceptions to this policy must obtain written permission from the department and the graduate school.
- (4) All students, who receive financial aid, must take at least 6 graduate credit hours during each fall and spring semester.
- (5) The assistantship is contingent upon both good work performance and good academic performance. Work performance will be evaluated each semester by the student's supervisor. The student's rate of pay may be adjusted upward or downward based on their evaluation. The assistantship will be discontinued if any of the following conditions occur:
 - (a) The student's supervisor gives the student a poor evaluation
 - (b) The student makes C or lower grades in any class
 - (c) The student withdraws from classes
 - (d) The student does not accomplish research to the satisfaction of their supervisor
- (6) Non-assistantship related work (outside or somewhere else in the university) must be limited to no more than five hours per week.
- (7) Failure to file a program of study by the end of the first semester of study will result in suspension of the assistantship

The following rules apply only to those master's students on *departmentally funded* support:

- (1) Master's students are not supported by the department during the summers
- (2) Students will be funded at most for four semesters. Any exception must be approved by the IMSE Graduate Committee
- (3) Students will be assigned to support both our educational and research missions. They will typically have two different supervisors for this work

The following rules apply only to those Ph.D. students on *departmentally funded* support:

- (1) Department support is given for at most one year at a time. The department head will review annual progress reports before determining whether a student can be reappointed to departmental support. Ph.D. students on support will be normally funded for up to two academic years. The major professor must petition the department head if they want their student to be supported longer than two years and justify the extended expenditure.
- (2) Department funds do not normally support students in the summer. Students are expected to support both our educational and research missions. They may have a work supervisor who is different than their major professor.

GRADUATE STUDENT PRIVILEGES

Mail Boxes: Each doctoral student is assigned a mailbox in the department. These boxes are in the central office. These boxes should be used primarily for business correspondence and for internal communication purposes (including telephone messages). Students should be quiet and considerate of the business being conducted in the office while checking for or retrieving their mail. Doctoral students should have their personal correspondence sent to their residential address. Your address here is as follows:

Name
Department of Industrial & Manufacturing Systems Engineering
Kansas State University
2061 Rathbone Hall
Manhattan, Kansas 66506-5101

Computer Accounts: Each student may apply for a computer account on the department's network. The department's network is used for class information (e.g., homework assignments, rescheduling, etc.) and department information. Here, students will have access to PC and workstation computing and through these to the University's computing resources. Access to the university computing facilities may be obtained by applying to the K-State Computing and Networking Services for an account.

Computing facilities in Rathbone 2095 are available for use by IMSE graduate students. This lab is only for IMSE students. DO NOT allow colleagues from outside the department to use these facilities without explicit permission from the Department Head.

Computer Labs: A student can access the computer labs 24 hours a day. No food or drink is allowed in the labs. Periodically and without warning, excess information is erased from the hard drives. So, please save all important files to either your h: drive or on disk. These computers are designed to assist you with courses and research, (**No game playing**).

Offices: There is not enough office space for all graduate students. Requests for office space must be made by a student's major professor, rather than the student. IMSE faculty and staff review office assignments each semester. The status of each graduate student is (re-)evaluated and adjustments to the student's priority in getting/keeping an office are made; office space may be taken from one student and given to another. Generally, offices are given in the following order: Ph.D. students on a support, Ph.D. students, visiting scholars, master's students on a GRA/GTA, and master's students pursuing a thesis. If someone has any concerns over offices, they may take their concerns to a member of the Graduate Committee.

Once assigned an office, students could be asked to leave if:

- They have not made sufficient progress toward their degree in the last semester.
Their student status has changed, i.e., dropped from assistantship, put on academic probation, changed to a coursework only degree, etc.
- They have been irresponsible with department space or equipment, i.e., damaged their office space, broken furniture or equipment, posted inappropriate material, etc.
- They were not good neighbors in their office, i.e., there were complaints from others assigned to the office that they were interfering with their work in some way.

Students may post things inside their office under the following restrictions:

- (1) Items may be posted only with sticky tack - no tape is to be used. Tacks may be used only on special bulletin board panels. If in doubt, ask a member of the department staff.
- (2) No items may be attached to the painted walls.

Office courtesy: It is common courtesy to keep offices clean. Since all of our offices have multiple users, eating in the office is discouraged. Graduate students have access to the graduate lounge in Rathbone 2073 to store and

reheat their food. A sink is provided in in Rathbone 2074 for all graduate students to use. This room, though, is an active office for master's students. Students should take care to use the sink quietly and not dispose of any food trash in the sink.

All food trash should be thrown away in the graduate lounge or in the bathroom trash cans. Custodians only empty trash receptacles in offices about once per week. Disposing of food trash in your offices is, therefore, unacceptable.

Keys: The following rules apply to IMSE Departmental keys assigned to you during your enrollment with the department.

- (1) You are required to report ALL lost keys AS SOON AS they are discovered missing. You will be responsible for all costs incurred for the loss of your keys. This cost may include the rekeying of the lock if it is deemed necessary to protect the room and equipment for which the key was lost.
- (2) During the semester that you graduate and PRIOR TO YOUR LEAVING CAMPUS, you are required to return ALL keys assigned to you and which you have not previously reported missing, to Ms. Vicky Geyer (Rathbone 2061D). This must be done NO LATER THAN the last day of final examinations for that semester. Ms. Geyer will mark her records indicating your return of these keys and will return the keys to Dykstra Hall for you. This should simplify the process of returning keys for you.
- (3) Students who do not satisfy these requirements:
 - will be placed on DELINQUENT STATUS with the university
 - will not be able to receive copies of their transcript, and
 - will not be allowed to enroll in the University again until the DELINQUENCY is resolved.

Additionally, such students can expect to receive recommendations from departmental faculty that reflect their irresponsible handling of departmental keys. Graduate assistants who are delinquent will not receive their last paycheck from the University.

Lockers: There are a few lockers on the ground floor of Durland that may be used by IMSE students by asking for permission in the departmental office.

- (1) You must put your name, address, and phone number on a card taped to the outside of the locker door. It should be taped to the locker so it will not fall off or be brushed off easily.
- (2) You must supply your own combination lock and the combination must be on file with Ms. Vicky Geyer (Rathbone 2061D).
- (3) When you leave the department you must remove your lock and empty out the locker. Unlabeled lockers will have their locks cut off and the contents discarded. This has been done on a number of occasions in the past.
- (4) Please follow the rules and do not select a locker unless you will really use it. With a locker for the storage of your coats and books, you will be able to study in one of the study carrels or in the library on the second floor of Durland.

Laboratory Usage: Keys to laboratories are available only to those who need to use the laboratory. They may be acquired by asking your major professor to request a key for the specific lab to which you need access. The major professor will request a key for you through the Department Head. Rules for office keys apply to laboratory and building keys as well. Any graduate student who plans to work in one of the departmental laboratories when the main office is not open should have permission to do so

Shop Use: No one should ever work alone with the manufacturing processes equipment. Another graduate student or professor must be present in case an emergency situation occurs. Any graduate student who plans to work in the manufacturing laboratories when the main office is not open should have permission to do so. To acquire this permission, they must pass a safety test and demonstrate that they have sufficient knowledge to safely operate the equipment that they plan to use. The major professor must request permission from the Department Head for each graduate student that wants to use the manufacturing labs outside of normal working hours.

Copier: The department has a copy machine in its main office complex. This copier is to be used for official business only. The rule about copying is: **IF IT IS NOT DEPARTMENT BUSINESS FOR PROFESSOR RESEARCH OR FOR TEACHING, COPYING IS NOT ALLOWED!** The only time you may use the copier is when your professor/supervisor gives you work to copy. Please let the office staff know whom you are making copies for prior to making any copies.

You CANNOT use the department's copy machine or printing facilities to make copies of your thesis, or other school documents. You are only allowed to print the original document using our print facilities. You should make all necessary copies using personal or commercial resources.

Graduate Lounge: The key to your office opens the Graduate Lounge (Rathbone 2073). The room contains a microwave and a refrigerator. There is a sink in the master's office area in Rathbone 2074. Graduate students who have offices have access to this sink to clean their dishes. Please do not dispose of any food trash down the sink drain or in the trash can in Rathbone 2074. Our students in the past have used this break room in a thoughtful and considerate way, which is why we continue to invite them to do so. Please clean up after yourself and under no circumstances should coffee grounds be dumped into the sink!

The graduate lounge also houses the department ping pong table. This room is primarily for the use of IMSE faculty and students, but faculty from some other departments have been granted permission to use the room as well. This activity is considered a great way for our students and faculty to interact with other professionals in a social setting. You are certainly welcome to play ping pong against graduate and undergraduate students from other disciplines, but please do NOT invite them to use the room without you being present.

The graduate student council helped to establish the following general guidelines for use of this room:

- Make sure that you do not place cans of pop in the freezer. Only foods intended to be frozen should be placed in the freezer.
- Do not store food in the refrigerator for more than a week. GSC members will regularly police the refrigerator and dispose of items that stay in the refrigerator too long.
- GSC will clean the room once each month, but each student should take the responsibility to clean-up after themselves.
- Please do not help yourself to any food that you did not personally place in the refrigerator.
- Eating cooked foods should not be done in your office space. Furthermore, food scraps should not ever be thrown away in your office trash cans. Custodians only empty office trash cans about once each week. Please throw your food scrap trash either in the graduate lounge trash can or in the trash cans in the bathroom. These trash cans should be emptied daily from Monday to Friday.

Practical Training: The IMSE Department will not approve practical training for students admitted and enrolled to work toward the Ph.D. degree but who have decided not to complete the Ph.D. degree requirements.

All practical training recommendation letter will be given to student only after student has submitted a draft of their thesis to the thesis committee and scheduled the date of the final defense.

Conference Travel Support:

Ph.D. students and M.S. thesis students are encouraged to present their research at professional conferences. The department generally provides up to \$2,000 per Ph.D. student and \$1,000 per M.S. thesis student in travel funds during the course of their studies. If a student completes an M.S. and begins a Ph.D., any amount granted during the M.S. does not count toward the total for the Ph.D.

These funds are NOT an obligation of the department or a right of the student. Rather, they are used to promote the research of the department. Consequently, travel grants should be considered investments of the department to achieve its research mission. Decisions to fund these grants are made on that basis.

Please note that the department head must approve any use of travel funds. It is expected that the student's research supervisor will match department travel funds. These funds will only be allocated when the travel advances the department mission.

To be eligible for funds, a student must submit a request according to the IMSE Graduate Student Travel Funding Request Process outlined here.

- The student prepares and submits Graduate Student Council Travel Award application (note that the deadline for this is typically more than 2 months in advance of travel date).
- Follow the department/KSU travel policy instructions.
- The student completes the IMSE Department Travel Form and obtains an approval signature from advising faculty.
- Student submits scanned pdf copy of completed IMSE Department Travel Form, a notification from Graduate Student Council, and confirmation of conference presentation acceptance by email to your faculty supervisor, department head, and College of Engineering Research and Graduate Programs Office (ergp@ksu.edu).
- Within two weeks of completion of travel, the student submits a trip report to the faculty supervisor. This report must be approved by the faculty supervisor and then subsequently submitted to the IMSE department head. **The trip report should include:**
 - Analysis of achievement of planned objectives.
 - A general summary of participation in the conference/program/workshop.
 - List of key contacts made.
- Within two weeks of completion of travel, the student submits necessary documentation of expenses for reimbursement to department and university offices. ***The IMSE department will not process reimbursement until the trip report has been approved by both the faculty supervisor and the IMSE department head.***

Poster funds: Ph.D. students and MS students completing a thesis are encouraged to give poster presentations for their research at a campus research forum or a technical conference. Students interested in poster presentation should obtain permission from their major professor to do so. The IMSE department will cover the printing cost of one poster per year (not to exceed \$150) for each student.