

**FALL 2022**

# Graduate Student Handbook

This handbook is intended to be a resource for information on services, programs, organizations and people within Mechanical, Industrial and Manufacturing Engineering. Efforts have been made to include the most accurate and up-to-date information, however it is not a contract with any student. If any information is found to differ from the UToledo catalog or any other official document, the official document should be relied on for such information.

**Department of  
Mechanical,  
Industrial and  
Manufacturing  
Engineering**

# Message from the Chair and Graduate Program Director

Welcome to the Mechanical, Industrial and Manufacturing Engineering Department (MIME) department. Formed in the spring of 1995, the MIME department is composed of the former Mechanical Engineering and Industrial Engineering Departments. Our department offers distinct degrees in mechanical and industrial engineering disciplines. Students pursuing a master's degree in Mechanical Engineering will receive the MSME degree upon completion of degree requirements. Similarly, students in Industrial Engineering will receive the MSIE degree. Doctoral degree students in both programs will receive the Ph.D. degree in Engineering Science.

The Mechanical Engineering and Industrial Engineering programs are recognized as two of the best programs on campus primarily because of the quality of our students, our laboratory facilities, and our faculty. Many of our graduates are enjoying excellent careers in engineering and it is likely you will meet them as they come to visit our department and possibly join them when you finish your studies here. Several of our faculty members have received the highest teaching award bestowed at The University of Toledo. Several faculty members have been nationally recognized in their professional societies in engineering because of their contributions in research and service.

You are here to be educated in industrial or mechanical engineering. The faculty, staff, and administration are here to help you reach your goal. We have the necessary knowledge and experience as well as the educational and research facilities, and we will contribute much of the effort. However, we will not contribute all of it. Education is an active process, and you, the student, must contribute your share of the effort. You will find it rewarding to succeed in developing your fundamental knowledge and your professional skills.

This Graduate Student Handbook is designed to help you by providing information on services, programs, organizations, and people. Specifically, the handbook provides information on:

1. Procedures for graduate Mechanical and Industrial Engineering students;
2. Information about the Mechanical and Industrial Engineering programs; and
3. Student-oriented resources and services

This booklet supplements the College of Engineering Graduate Student Handbook and The Graduate Student Handbook of The College of Graduate Studies. This booklet does not contain all the rules and regulations that must be followed to successfully earn your degree. It is your responsibility as a student to identify and comply with the current applicable regulations or procedures not included or referenced in this booklet. We intend to update this handbook regularly. However, you will want to check the MIME graduate webpage at <https://www.utoledo.edu/engineering/mechanical-industrial-manufacturing-engineering/graduate/> occasionally for the latest updates and changes in requirements .

For further information contact the following offices, publications or persons: the Graduate School Office, UH 3240; Office of Graduate Studies and Research, College of Engineering, NI 1014; the MIME Graduate Program Director, NI 4006D; and the Graduate Catalog of the University of Toledo. Additional instructions and regulations are contained in a publication entitled "Manual for the Formatting of Graduate Dissertations and Theses," which is available from the College of Graduate Studies.

Once again, welcome to our department. We hope you have a successful student career in the MIME department, and we look forward to working with you.

Sincerely yours,  
Mohammad Elahinia, Ph.D., FASME  
Distinguished University Professor and Chair  
Telephone: 419.530.8210  
Email: Mohammad.Elahinia@utoledo.edu

Mohamed Samir Hefzy, Ph.D., PE, FASME,  
Professor and Director of Graduate Studies  
Telephone: 419.530.8234,  
Email: Mohamed.hefzy@utoledo.edu

# Contents

- Message from the Chair and Graduate Program Director .....i
- Section 1: Graduate Study in Mechanical, Industrial and Manufacturing Engineering .....5
- Section 2: Faculty and Staff .....6
  - Faculty .....6
  - Part-time, Adjunct and Visiting Faculty .....9
  - Staff .....9
- Section 3: Admission ..... 10
  - 3.1 Master’s Programs..... 10
    - Regular Graduate Student..... 10
    - Provisional Graduate Student ..... 10
    - Conditional Graduate Student ..... 10
    - Non-Degree Graduate Student ..... 11
    - Graduate Special Student..... 11
  - 3.1.1 BS-MS Degree Option ..... 11
  - 3.2 Ph.D. Program..... 12
  - 3.3 Transfer Credits from another University ..... 13
- Section 4: Financial Support ..... 14
  - 4.1 Tax Status ..... 15
  - 4.2 Renewal of Financial Aid..... 15
  - 4.3 Duration and Limitation of Support ..... 16
    - Expected Duration of Study for Full-time Students: ..... 16
    - Incremental Goals ..... 17
  - 4.4 English Screening Exam for International Student Teaching Assistants ..... 18
- Section 5: Registration Procedures ..... 19
  - 5.1 Registration through the Web..... 19
  - 5.2 Registration at the Registrar's Office..... 20
  - 5.3 Adding and Dropping a Course..... 20
    - WHAT ARE THE IMPLICATIONS OF WITHDRAWING FROM A COURSE? ..... 22
- SECTION 6: Faculty Advisors, the Graduate Program Director, and the Associate Director of Department Student Services..... 22
- SECTION 7: Graduate Degree Procedures ..... 24
  - 7.1 General Requirements..... 24

7.1.1 Minimum Continuous Enrollment.....	24
7.1.2 Standards of Academic Performance.....	24
7.1.3 Mathematics Requirement .....	24
7.2 Master’s Program .....	25
7.2.1 Plan of Study .....	26
7.2.2 Thesis, Project or Course-Work Degree .....	27
7.2.3 Summary of Steps toward Graduation.....	28
7.3 Doctoral Program .....	30
7.3.1 Plan of Study .....	30
7.3.2 Ph.D. Course Program .....	31
7.3.3 Ph.D. Candidacy Qualifier.....	32
7.3.4 Ph.D. Candidacy Requirements.....	35
7.3.5 Ph.D. Dissertation Requirements.....	35
7.3.6 Summary of Steps toward Graduation.....	37
7.3.7 Getting a master’s degree along with Ph.D. ....	38
SECTION 8: Academic Policies .....	39
8.1 Absence from Class.....	39
8.2 Problems with a Course.....	39
8.3 Minimum Course Load .....	39
8.4 Course Audits.....	39
8.5 Grade of Incomplete.....	39
8.6 Final Examination Schedule.....	41
8.7 Independent Study Coursework.....	41
8.8 Research Outside of Supervision by a MIME Faculty Member .....	41
8.9 Graduate Seminar Series:.....	42
SECTION 9: General Information .....	42
9.1 Advisory Committee .....	42
9.2 Thesis or Project or Dissertation Defense .....	43
9.3 Thesis and Project Format.....	44
9.4 Publication of Research Results .....	44
9.5 Academic and Non-Academic Misconduct Policy .....	44
LEARNING OUTCOMES .....	46
MS in Mechanical Engineering .....	46
MS in Industrial Engineering.....	46
Ph.D. in Engineering with a concentration in Mechanical Engineering .....	46

Ph.D. in Engineering with a concentration in Industrial Engineering.....	47
9.6 Student Societies in Mechanical, Industrial and Manufacturing Engineering .....	47
9.7 Practical Training for International Students .....	49
9.8 Library and Computer Facilities.....	49
9.9 Mail.....	49
9.10 Keys.....	49
9.11 Campus Resources.....	50
9.13 Important Dates to Know .....	52
9.14 Frequently Asked Questions.....	53
Appendices .....	55
APPENDIX 1.....	55
APPENDIX 2.....	56
APPENDIX 3.....	57

# Section 1: Graduate Study in Mechanical, Industrial and Manufacturing Engineering

Graduate students enrolled in the **Mechanical, Industrial and Manufacturing Engineering Department (MIME)** at The University of Toledo may pursue the following degrees: Master of Science in Industrial Engineering (MSIE), Master of Science in Mechanical Engineering (MSME), and Doctor of Philosophy in Engineering. The research focus of the department is in the following two areas: (1) Computational and Experimental Thermal Sciences, and (2) Materials, Design and Manufacturing.

**Computational and Experimental Thermal Sciences:** The Computational and Experimental Thermal Sciences research focus group encompasses broad research activities. These include research in such areas as alternative energy, computational fluid dynamics and heat transfer, tribology, flow stability and transition, vortex dynamics, drag reduction, small and medium engine turbines, microgravity flows, thermal systems simulation, biofluid flow dynamics, turbulent boundary layer characterization, experimental methods using hot wire/film anemometry, laser Doppler velocimetry, particle image velocimetry, and flow visualization techniques.

**Materials, Design and Manufacturing:** The objectives of the Materials, Design and Manufacturing focus group are to conduct research that will advance the engineering knowledge base and lead to new processes and products in the broad areas of mechanical systems, dynamic systems and control, mechanical behavior of materials and mechanical design. This focus group also emphasizes solving manufacturing problems. Example problems include the development of processes for products, basic understanding of metal forming and cutting, and improvement of the environmental impact of industry. Specifically, the research thrust of this group includes but is not limited to the dynamic behavior and control of mechanisms, machines, mechanical systems, processes, structures and smart material systems, including MEMS, biomechanics, design methodology, fatigue and fracture mechanics, machine dynamics, noise and vibration analysis and control, solid modeling and vehicle dynamics. An essential aspect of this group is the blend of practical plant expertise with the benefits of computational technologies, including computer-aided design and manufacturing. Processes are understood from a “hands-on” perspective and expanded through defining theoretical models. Engineering materials are studied throughout their life cycle, from raw material acquisition, product creation and usage, remanufacturing, recycling and final material disposal. Key expertise within this group includes internationally recognized faculty in rapid prototyping and additive manufacturing, process engineering, facilities planning and modeling, and environmentally conscious manufacturing.

**It is important to note that UToledo has two fifteen-week long academic semesters during the school year. These are Fall Semester, which runs from end-August to mid-December, and Spring Semester, which runs from January until the first week of May. Summer semester is a third semester consisting of twelve weeks. For those students used to a quarter system, full-time study of 45 credits in an academic year is equivalent to 30 credits in the semester system.**

## Section 2: Faculty and Staff

### Faculty

**Dr. Omid Amili, Assistant Professor**

Ph.D., Monash University, 2012

Experimental fluid mechanics, turbulence, biofluids

**Dr. Halim Ayan, Associate Professor**

Ph.D., Drexel University

Non-equilibrium Electric Discharges, Plasma Medicine, Plasma Physics and Applications

**Dr. Lesley Berhan, Associate Professor, Associate Dean of Diversity, Inclusion & Community Engagement**

Ph.D., University of Michigan, 2003

Mechanics of Materials, solid mechanics and FEA, 2D and 3D fibrous networks

**Dr. Sarit Bhaduri, Distinguished University Professor**

Ph.D. State University of New York

Materials Science, Fracture and Fatigue, Solid State Materials, Biomaterials, Ceramics

**Dr. George Choueiri, Assistant Professor**

Ph.D. University of Ottawa, 2014

Experimental fluid mechanics, Turbulence, Nonlinear dynamics, Non-Newtonian flows, Additive drag reduction

**Dr. Sorin Cioc, Clinical Associate Professor and Undergraduate Program Director**

Ph.D., Polytechnic University of Bucharest, Romania

**Dr. Mohammad Elahinia, Distinguished University Professor and Chair**

Ph.D., Virginia Tech, 2004

Additive manufacturing, Shape memory materials

**Dr. Nicoleta Ene, Assistant Lecturer**

Ph.D., The University of Toledo

Tribology, vibrations

**Dr. Matthew Franchetti, Professor and Associate Dean of Undergraduate Studies**

Ph.D., The University of Toledo

Orientation, Professional Development, Statistical Quality Control, Facilities Planning, Engineering Economics, Statistical Analysis, Senior Design

**Dr. Anju Gupta, Assistant Professor**

Ph.D., University of Rhode Island

Thermal- thermal analysis of phase changing materials, phase change heat transfer, high temperature coatings, Materials- characterization, nanocomposites, manufacturing, soft nanomaterials

**Dr. Meysam Haghshenas, Assistant Professor**

Ph.D., Western University (UWO), 2013

Fatigue and fracture, materials science, micro/nano-mechanics, metal additive manufacturing

**Dr. Mohamed Samir Hefzy, Professor and Graduate Programs Director**

Ph.D., University of Cincinnati, 1981

Orthopaedic Biomechanics, Assistive Technology and Rehabilitation Engineering, Finite Element Methods

**Dr. Duane Ray Hixon, Professor**

Ph.D., Georgia Institute of Technology, 1993

Computational Aero-Acoustics, Fluid Dynamics

**Dr. Steven Huebner, Research Professor and Executive Director of the Univ. of Toledo Institute of Applied Eng. Research**

Ph.D., The University of Toledo

Small Turbojet and Turbofan Engine Technology; Design of Small Engine Combustors, Heat Transfer and CFD

**Dr. Ahalapitiya H. Jayatissa, Professor**

Ph.D., Shizuoka University, Japan, 1995

Materials Characterization and Electronic Materials, MEMS, Nanomaterials

**Dr. Theo G. Keith, Distinguished University Professor Emeritus**

Ph.D., University of Maryland, 1971

Tribology, Computational Fluid Dynamics, Fluid Mechanics, Heat Transfer, Aeroelasticity

**Dr. Behrang Poorganji, Research Professor, Director of Advanced Manufacturing, Univ. of Toledo, Institute of Applied Engineering Research**

Ph.D., Tohoku University, Japan, 2007

Additive Manufacturing Materials and Process Development, Powder Metallurgy, Accelerated Alloy Design, High Temperature and Light Weight Materials, Materials-Process-Property Relationships, Thermomechanical Processes, Technology Commercialization

**Dr. Ala Qattawi, Assistant Professor**

Ph.D., Automotive Engineering, Clemson University, 2012

Design for Manufacturing, Metals Processing, Origami Sheet Metal Forming, and Sustainable Manufacturing

**Dr. Adam Schroeder, Assistant Lecturer**

Ph.D., The University of Toledo, 2018

Swarm Robotics and Swarm Intelligence, Biomimicry, Harmful Algal Blooms, GPU Computing, UAV Remote Sensing

**Dr. Chunhua Sheng, Professor**

Ph.D., Mississippi State University

Computational Fluid Dynamics, Numerical Algorithms for Structural and Unstructured Grids, Turbulence and Transition Modeling, Fluid-Structure Interaction Coupling

**Dr. Hossein Sojoudi, Associate Professor**

Ph.D., Georgia Institute of Technology

Thermal-Fluid; Nanoscience & Nanotechnology; Interfacial Engineering



**Dr. Brian Trease, Assistant Professor**

Ph.D., The University of Michigan, 2008

Mechanism Design, Deployable Structures, Multifunctional Materials, Optimization, Compliant Mechanisms, Spaceflight Hardware, Bio-inspired Design, Origami-inspired Design, Swarm Robotics, Environmental Remote Sensing.

**Dr. Hongyan Zhang, Professor**

Ph.D., Ohio State University, 1991

Solid Mechanics, Sheet Metal Forming, Welding Fundamentals and Applications, Material Forming and Joining, Adhesion, Welding and Composite Material Processing

## Part-time, Adjunct and Visiting Faculty

**Dr. Abdulrasool Al-Hayani**

**Dr. Shawn Capser**

**Dr. Douglas Lewandowski**

**Dr. Douglas Oliver**

**Dr. Alex Spivak**

**Dr. Mehdi Pourazady**

**Dr. Reza Rizvi**

## Staff

**Mr. Brian Combs: Laboratory Machinist I**

Room NI-1093 - Telephone: 530-8244 - Fax: 530-8206 - Email: [Brian.Combs@utoledo.edu](mailto:Brian.Combs@utoledo.edu)

**Mr. John Jaegly: Laboratory Supervisor**

Room NI-1084 - Telephone: 530-8242 - Fax: 530-8206 - Email: [jjagly@eng.utoledo.edu](mailto:jjagly@eng.utoledo.edu)

**Mr. Terry Kahle: Engineering Laboratory Assistant Manager**

Room NI 1063 – Telephone: 530-8113 – Fax: 5308206 – Email [Terence.kahle@utoledo.edu](mailto:Terence.kahle@utoledo.edu)

**Ms. Debra L. Kraftchick: Associate Director of Department Student Services**

Room: NI 4006F, Telephone: 530 8204, Fax: 530-8206, Email: [Debra.Kraftchick@utoledo.edu](mailto:Debra.Kraftchick@utoledo.edu)

**Ms. Kim McIntosh: Academic Resource Analyst**

Room: NI-4004, Telephone: 530-8037, Fax: 530-8206. Email: [Kimberley.Mcintosh@utoledo.edu](mailto:Kimberley.Mcintosh@utoledo.edu)

**Ms. Kathryn Rose: Secretary II**

Room: NI 4005, Phone: 530-8210, Fax: 530-8214, Email: [Kathryn.Rose@utoledo.edu](mailto:Kathryn.Rose@utoledo.edu)

## Section 3: Admission

### 3.1 Master's Programs

#### Regular Graduate Student

The minimum requirements for admission as a regular graduate student to pursue the Master of Science Degree are the following:

1. A baccalaureate degree in mechanical or industrial engineering (or a closely related engineering program) with an overall grade point average of 3.0/4.0 or higher.

If the baccalaureate degree is from an English-speaking country, the preceding is sufficient.

2. If the baccalaureate institution is located in a country where English is not the native language, scores from the Test of English as a Foreign Language (TOEFL) equal to or in excess of 80 (for IBT) or 550 (for PBT), or scores from the International English Language Testing System (IELTS) equal to or in excess of 6.5, or scores from the Duolingo English Test equal to or in excess of 105, or scores from the Pearson Test of English (PTE) equal to or in excess of 58 must be submitted.

#### Provisional Graduate Student

Provisional admission may be offered to students who do not satisfy all the criteria for regular admission subject to the following conditions.

1. If the undergraduate GPA is somewhat below 3.0/4.0, results of the GRE verbal, quantitative and analytic writing sections may be required with scores equal to or in excess of 145, 150, and 3.5, respectively.
2. If the baccalaureate degree is in an engineering field other than mechanical or industrial engineering (or a closely related engineering program), or a hard science (physics, math, chemistry, etc.) provisional admission will be subject to specified preparatory courses. A preparatory course program sufficient in number and with content designed to provide the student with those competencies normally expected of entering graduate students within the technical specialty they expect to pursue will be specified. These courses will be in excess of the 30 credit hours minimum required for the master's degree. The preparatory courses may include undergraduate courses that are required or optional in the baccalaureate mechanical or industrial engineering curriculum. The number of credit hours required will be specified at the time of admission. Specification of which courses are required may be postponed until the initial registration. A student with a baccalaureate degree in engineering technology (BET) is also expected to complete a similar preparatory course program in excess of the 30 credit hours minimum required for the master's degree. This would be accomplished through the undergraduate program as a UWD (undergraduate with a degree).
3. Students admitted provisionally may have specific limitations placed on their initial semester performance. Specifications will usually include no grades below a B and completion of all courses recommended by the Director of Graduate Studies (no drops or withdrawals).

Once the conditions specified under 2 and/or 3 are met, the provisional designation will be changed to regular.

#### Conditional Graduate Student

Conditional admission is a classification restricted to students who graduated from a baccalaureate institution in a country where English is not the native language and who have not achieved the TOEFL/IELTS/Duolingo/PTE required minimum score listed above. If such a student has met all admission requirements, including GPA at

least 3.0/4.0, except for the TOEFL/IELTS/Duolingo/PTE requirement, they may be admitted as a conditional student. Such admission allows a student visa to be granted for the purpose of attending the American Language Institute (A.L.I.) at UT.

After a period of study at A.L.I. when the student achieves a TOEFL at least 80 for IBT (or 550 for PBT), they may be reclassified as a regular or provisionally admitted student. A conditionally admitted student is not permitted to register for academic courses.

## Non-Degree Graduate Student

Non-degree Admission will be granted to those students who want specific courses or groups of courses to meet special personal needs. Students may be considered for admission to the individual colleges as "non-degree" students. These students are expected to have at least a bachelor's degree and must have permission of the Graduate Director of the department to enroll in each specific course. Persons applying are not candidates for degrees, but subsequent admission to a degree program is possible based on recommendation of the college. In such cases, up to 12 graduate credits earned as a non-degree student may be accepted as determined by the Graduate Director of the department. For students with a baccalaureate degree, if the degree granting institution is in a country where English is not the native language, scores from the TOEFL/IELTS/Duolingo/PTE tests must be submitted.

## Graduate Special Student

Applicants who wish to explore graduate study before deciding on a degree program may request the simpler application form for Graduate Special Student Status. If they are subsequently accepted into a degree program, a maximum of 10 semester hours earned while on this status may be counted toward a degree if approved by the Director of Graduate Studies. For students with a baccalaureate degree, if the degree granting institution is in a country where English is not the native language, scores from the TOEFL/IELTS/Duolingo/PTE tests must be submitted.

### 3.1.1 BS-MS Degree Option

Students currently enrolled in the MIME undergraduate program at the University of Toledo are given an opportunity to participate in the BS-MS option. If accepted, these students will be automatically accepted into one of the MIME MS programs. Up to 9 semester credit hours of graduate level courses from the MS degree program may be used in lieu of BS degree credits. To receive graduate credit hours, the courses must meet the following requirements:

1. The courses must be taken at The University of Toledo after the student is accepted into the BS-MS option.
2. Only 5000-level or higher engineering courses may be included.
3. An approved MS plan of study must be filed indicating the courses that will be accepted in place of specific BS degree requirements.

Students who are within 18 hours of graduation, have a minimum of 3.3 GPA, and have completed their minimum co-op work requirements may participate in the option. Applications will be accepted no earlier than one year (33 semester credit hours) prior to the expected completion of the BS program. Applications should contain a completed application form for regular admission status (special student application is not accepted), three letters of recommendation, and a biographical sketch (1 page). Students must file an MS plan of study immediately after being accepted into the program and specify in it up to 9 semester credit hours that they intend to apply in lieu of specific BS degree requirements.

## 3.2 Ph.D. Program

Admission to the Ph.D. program in the MIME department normally requires:

1. An MS degree in mechanical or industrial engineering (or a closely related engineering program) with a GPA of 3.3/4.0 or higher (exclusive of thesis grades). The completion of a thesis as a part of the MS degree, which demonstrates a high degree of technical competence and articulate technical communication, is considered very favorably.

If the institution granting the MS degree has an ABET accredited baccalaureate engineering program and the language of the thesis is English, the above requirement is sufficient.

2. If the MS thesis is not completed in English or a thesis is not completed as a part of the MS program, then evidence of effective technical communication in English in written and spoken forms must be submitted. Such evidence may be in the form of documents written by the student and a personal or telephone interview with the student. If the student has both the baccalaureate and MS degrees from institutions located in countries where English is not the native language, scores from the aforementioned TOEFL/IELTS/Duolingo/PTE tests must be submitted.
3. If the MS degree and, in rare cases, the baccalaureate degree also are not in mechanical or industrial engineering (or a closely related field), admission will require evidence that the student possesses most of the prerequisite competencies normally expected of an entering Ph.D. student within the technical specialty of intended study.
4. When the MS degree was completed without thesis, admission may be granted if the student's other credentials are exceptional.

If the above conditions are satisfied, the student will be admitted as a Ph.D. student in industrial or mechanical engineering within the more appropriate of the two focus groups with respect to the intended area of interest.

### 3.3 Transfer Credits from another University

A student who has attended another university may wish to apply the attained credits to his/her graduate program in the MIME department. At the MS level, the Graduate School allows the transfer of up to 10 credit hours (based on UT's semester system) from another institution subject to the approval of the MIME Graduate Program Director. Application for transfer of credits must be made to the student's advisor. The following procedure must be followed to transfer credit

A.	The student must prepare a package for the Director of Graduate Studies including:	
	1.	A letter from the student to the MIME Graduate Program requesting transfer of the credit and identifying the course(s) for which credit is sought.
	2.	An official transcript from the other institution showing the course(s) taken and grade(s) given. <b>Only courses with grades of B or better can be transferred.</b> Only an official transcript is acceptable.
	3.	The course syllabus, name of the professor teaching the course, textbook used, examinations taken, and samples of work performed for the course.
B.	The Director of Graduate Studies will:	
	1.	Review and recommend approval/disapproval of transfer of credit for courses in or closely related to Mechanical, Industrial and Manufacturing Engineering.
	2.	Courses not in Mechanical, Industrial and Manufacturing Engineering will be reviewed and a recommendation made by the appropriate department.
	3.	Upon completing the recommendations, the package will be forwarded to the College of Engineering Associate Dean of Graduate Studies and then to the Dean of the Graduate School for final approval.
C.	The Dean of the Graduate School will	
	1.	Give final approval/disapproval of transfer credit.
	2.	Send a letter on the final decision(s) to the advisor. A copy of the letter will be placed in the student's file.

**NOTE: The acceptance of a course and subsequent granting of transfer credit does not guarantee that the course will be accepted as a part of the Plan of Study for a master's or doctoral program. Approval of the master's Plan of Study or the Doctoral Program Plan of Study is a separate issue.**

For more details, please review the University of Toledo Transfer of credit to Graduate Degree Policy (<https://www.utoledo.edu/policies/academic/graduate/pdfs/3364-77-06.pdf>).

If a student would like to take a course at another university and have it applied to his/her degree at UToledo, the student needs to fill out a form called "Pre-approval to Take a Course at Another University". This form is available at <https://www.utoledo.edu/engineering/mechanical-industrial-manufacturing-engineering/pdfs/Advanced%20Approval%20fillable.pdf>. The Director of Graduate Studies must approve the form.

A student who has obtained one master's degree at The University of Toledo and elects to take a second master's degree at The University of Toledo may use up to 12 semester hours from the first master's if the coursework is appropriate for the student's program.

## Section 4: Financial Support

Students who are eligible for or who have achieved regular admission to the graduate program on a full-time basis are eligible for consideration for financial aid from departmental, college of engineering, and/or university sources. Formal consideration will not begin, and no award can be made before the student is admitted as a regular graduate student (provisionally or conditionally admitted students are not eligible until their admission status is changed to regular). Aid is available in the form of graduate assistantships (GA) based on college-controlled funds or research assistantships (RA) positions based on grant or contract funds to various faculty members, tuition scholarships (TS) based on college-controlled funds and only for MS students and fellowships awarded through the College of Graduate Studies.

**Graduate Assistantships (GA):** A limited number of graduate teaching assistantship(s) are available each year for qualified full-time graduate students in the MIME Department. When available, these awards provide employment for the student to aid in financing a graduate education and experience in engineering education and research. In addition to paying student stipends, graduate assistants receive a fee waiver for up to 9 credit hours for instructional and out-of-state surcharge fees. The student is responsible for the general and laboratory/technology fees and health insurance. The student, in turn, works approximately half-time (20 hours/week) at assigned duties for the Department. Such duties may include assignment as a laboratory teaching assistant, a course grader, or as a research assistant to a professor. Assistantships are awarded on a competitive basis from among those graduate students who apply.

**Fellowships:** Graduate fellowships may also be available and are awarded to outstanding students. When available, fellowships provide support for full-time study without work assignment. In general fellowships are competitive and available through the Graduate School. Deadlines for candidate applications are announced annually. Information on graduate fellowships is available from the:

College of Graduate Studies  
University Hall Room 3240; MS 933  
The University of Toledo  
Toledo, Ohio 43606

Fellowship awards vary depending on their source. However, full fellowships generally provide a stipend that is comparable to a full graduate assistantship as well as tuition. Fellowship students do not have specific work assignments; however, they must satisfy any stipulation set by the fellowship source as well as maintain an acceptable level of academic performance and make appropriate progress on their thesis/dissertation research.

**Tuition Scholarship (TS):** A limited number of Tuition Scholarships are available each year for qualified full-time graduate students pursuing a MS degree in the MIME department. These awards are available only to MS students. When available, graduate students may receive a fee waiver for up to a total of 18 credit hours for 2 semesters for instructional and out-of-state surcharge fees. The student is responsible for the general and laboratory/technology fees and health insurance. Fee waiver for additional credit hours may be provided at the discretion of the MIME department and the College of Engineering after approval from the College of Graduate Studies.

**Research Assistantships (RA):** Research assistantships are available through externally funded research grants. Appointments are available for graduate students to participate on sponsored projects or grants under the directions of the MIME faculty. These projects in general constitute the thesis or dissertation subjects for research assistants. Accordingly, research assistants are expected to focus their thesis or dissertation efforts on the sponsored research project. *These awards are given directly by the faculty in charge of the sponsored research.* Continuation or termination of the appointment is decided by the faculty advisor based on the availability of funds and the student's progress in research and academic areas. RA's are very competitive. Research assistants are selected from current MIME students as well as outstanding new students. Research Assistants are expected to work a minimum of 20 hrs. /week at assigned research duties.

**Scholarships:** University scholarships from various industries, private foundations, government and other funding sources are available. As these scholarships become available and are announced, the notices are posted. However, the student must also seek their availability independently as the various stipends, tuition and fee waivers have different criteria for eligibility.

A limited number of these scholarships are available each year. Information on available scholarships can be found at the following site: [Tuition, Scholarships, Fellowships and Awards \(utoledo.edu\)](https://utoledo.edu/tuition-scholarships-fellowships-awards).

**Loans:** Graduate students who attend the University of Toledo are eligible to make application for federal need-based financial aid. For details, check with the office of Student Financial Aid (Rocket Hall – Room 1200). Information about financial aid can be found at the following site: [Office of Financial Aid \(utoledo.edu\)](https://utoledo.edu/office-of-financial-aid)

Selection of Graduate Assistantships and Tuition Scholarships is based on availability of funds and academic credentials to include degrees, transcripts of all previous college level education and the corresponding grade point averages, and letters of recommendation, as well as TOEFL/IELTS/Duolingo/PTE scores when required or when available. In addition, the previous classroom and research performance will be weighted heavily in considering the application of enrolled students.

Applications are accepted at any time from enrolled students as well as from new students entering the program during any term. The majority of awards, however, will be made in March or April to new students entering the program in August and to enrolled students to begin their support in August. The Graduate Director makes the decision on who will be supported as a GA from college sources. The decision on whom will be supported as an RA on each individual grant and contract is made by the principal investigator. Fellowship recipients are generally selected by the College of Graduate Studies and are highly competitive. The departmental role in this process is to choose a few applicants who are exceptionally well qualified to be considered in such competitions. If these applicants are not awarded a fellowship, they will normally be among the first to be offered assistance from some other source.

## 4.1 Tax Status

Research and Teaching Assistantships are subject to federal, state, and local taxes since they are considered compensation for services rendered. The final determination of whether such awards are taxable is the prerogative of the Internal Revenue Service and the corresponding authorities for state and local taxation. International students can visit the Office of International Student and Scholar Services for assistance with tax return preparation.

## 4.2 Renewal of Financial Aid

Financial aid to incoming and continuing students is offered for the purpose of assisting them in the pursuit of their degree objectives. Awards are made for a fixed term with the possibility of renewal if sufficient funds are



available, teaching or research needs exist in the department, and the student is making satisfactory progress in courses and research. The receipt of an award does NOT imply a commitment by the MIME department to subsequent awards. Offer letters to students describe the type of award (teaching or research), the time period of the award, and the stipend and other benefits, if any, attached to the award. If the award is to be continued, the student will receive a subsequent offer letter.

For incoming students receiving initial financial aid (GA's or RA's) support beyond the initial one-year offer is the primary responsibility of the student's permanent research advisor. The best assurance that a student has with respect to continuing financial assistance is to devote their efforts toward high scholastic achievement and the best possible progress toward the completion of their degree objective.

**Any student with an assistantship that fails to maintain a 3.0 GPA may be given one semester to raise it to the minimum level. Failure to do so will result in termination of the assistantship. If a student's GPA falls below the minimum for two consecutive semesters, the student is subjected to suspension or termination.**

### 4.3 Duration and Limitation of Support

Graduate students are supported for the dual purpose of accomplishing their assignments related to instruction and research and to completing their studies. In order to accomplish the latter, they must complete both the courses designated in their plan of study with satisfactory grades and their thesis/dissertation projects when required. Thus, satisfactory performance by supported graduate students requires completion of work assignments at the time requested, completion of the courses in the plan of study during the specified semester with satisfactory grades, and completion of the successive stages of their thesis/dissertation projects such that completion will be achieved within the duration scheduled for their support. Note that it is not sufficient to merely complete work assignments satisfactorily and on time while completing courses in the plan of study with satisfactory grades. In addition, it is necessary for the student to complete those incremental portions of thesis/dissertation research that are required to complete that portion of thesis/dissertation research that registration each semester implies. It is not satisfactory to postpone this effort expecting to accelerate progress at some later time in the program. Further, a proper plan of study will be timed to complete the program within the time-duration goals specified below.

#### Expected Duration of Study for Full-time Students:

The specifications below assume full-time support. Semesters at partial support, including summers, are counted in proportion to that support. If a student takes off a summer, that summer is not counted. The graduation goals for Ph.D. students are referenced from the semester after they have completed the requirements for their MS degree.

**MS** - Fellows, GA's or RA's who are supported by a grant or the department and whose work is also to be his/her thesis project, will normally be expected to complete the degree in four (4) or five (5) terms of support. Students pursuing a non-thesis option (project option or course work only option) are also expected to complete their degrees in four (4) to five (5) terms. **Students receiving GA's or RA's or Fellowships are expected to complete the MS degree with a thesis option. Students receiving tuition scholarships are expected to complete the MS degree with the project option. Students completing their MS degree with the course work only option are not eligible to receive financial aid in the form of GA's or RA's or fellowships or tuition scholarships.**

**Ph.D.** - Fellows, GA's or RA's who are supported by a grant or the department and whose work is also to be his/her dissertation project will normally be expected to complete their program in nine (9) to twelve (12) terms of support beyond the master's degree. **No tuition scholarships are offered to Ph.D. students.** In addition, all Ph.D.

students (supported and unsupported) will be expected to satisfy the incremental goals as summarized in the following table:

### Incremental Goals (Number of Academic Terms)

Degree Classification	Advisor Chosen	Plan of Study Filed	Ph.D. Qualifying Exam	Degree Completed
MS [Thesis/Project]	1	1	NA	4 - 5
MS [Coursework] (No financial support in the form of GA's or RA's or fellowships or	1	1	NA	4 - 5
Ph.D.	1	2	2 or 3	9 - 12

In certain circumstances, the number of terms may increase; these are handled on a case-by-case basis.

If a student is picked up on support during his/her program or that student transfers with credits completed or shifts from RA to GA or vice versa, a decision will be made at that time on an appropriate goal for completion of the program. That is, students who receive departmental support part way through their program will not be funded as if they were just starting.

Commitments of support will normally be made for an academic year (two semesters) or for the remainder of an academic year for students picked up on support within that year or until the expected completion of a degree if within that academic year. The receipt of an award does not imply a commitment by the MIME department to subsequent awards. However, when a student is invited into the program as an MS/Ph.D. student with support, it will be understood that they will have high priority for continuation of that support to the successful completion of that degree as long as performance of duties, coursework and/or progress on thesis/dissertation research are satisfactory. It should be noted that the periods listed in the above table are maximum terms and support is *not* guaranteed for these periods.

## 4.4 English Screening Exam for International Student Teaching Assistants

To assure that Teaching Assistants (TAs) are sufficiently skilled in oral communication in English (speaking and understanding) to fulfill classroom assignments, the State of Ohio requires that all international students involved in classroom teaching be certified as proficient before they are permitted to teach. The University implements this requirement by screening all new international students at the beginning of the fall semester to determine their oral English proficiency. The screening is done by interview with a committee composed of departmental and University faculty and graduate and undergraduate students. There are three potential outcomes of the screening:

Category 1: These TAs may have **no direct contact** with students. They may be utilized as graders or in some other capacity that does not involve any form of instruction or interaction with students for instructional purposes.

Category 2: These TAs may have **limited contact** with students. They may assist with one-on-one help sessions like those that typically take place during office hours, but they may not conduct any regularly scheduled instructional event such as a lab, recitation or course section.

Category 3: These TAs have no restrictions on their instructional interactions with students. They may conduct labs, recitations, small-group sessions or regular classes as deemed appropriate by the department.

It should be noted that the support committed to new international students is not dependent on their placement under the screening exam. A student previously designated as belonging to Category 1 or 2 can be re-screened to move up to a higher category. Students who are placed in category 1 or 2 may be required to attend a training course conducted by the American Language Institute (A.L.I.) until they achieve a qualified rating. It is expected that such a student will earn a qualified rating after one or, at most, two terms in the A.L.I. course. If they do not, that will jeopardize their reappointment.

International student TA's who are appointed other than Fall semester may go through a special screening process prior to the next fall semester such that they can be given classroom assignments or they may be withheld from classroom. For more information about the International Teaching Assistant (ITA) Speaking Screening procedure, visit the A.L.I website at [ITA Screening \(utoledo.edu\)](http://utoledo.edu/ita-screening).

## Section 5: Registration Procedures

Graduate student registration is identical to procedures followed by all other UToledo students in most respects. Students need to consult with their faculty advisors about the courses to be taken during a given semester. Please visit the following site <https://www.utoledo.edu/offices/registrar/frequently-asked-questions.html> for registration frequently asked questions and review important dates for registration and add, drop and withdrawal deadlines for each term. Students can register online (web registration). They can also register in-person in Rocket Solution Central at Room 1200 Rocket Hall. Web registration does not require the signed approval of student's advisor. However, registered courses must be consistent with the Plan of study. A few special procedures include the following:

### A. Project, Thesis, and Dissertation Research Registration:

Registration for thesis (MIME 6960 X where X is the number of credit hours and ranges from 1 to 9), project (MIME 6920) or for dissertation (MIME 8960 X) requires the advisor's approval. It also requires the advisor's personal section number, which can be obtained from the advisor.

### B. Supported Student (RA's, TA's and Fellowship Holders) Registration:

Supported students normally are required to register for a full course load (9 hours) during the fall and spring terms. MS students may use the independent research course with an academic advisor (MIME 6900) to meet the full-time requirements. Registering for this course also requires a course request form and the advisor's personal section number. New graduate students may also be required to demonstrate their research capabilities by enrolling in the MIME 6900 course. Details on this requirement will be provided during the Graduate Student Orientation. Ph.D. students may fill up the 9-hour total with dissertation MIME 8960.

### C. International Students

International students on F1 student visas are required by the Department of Homeland Security regulations to register for a minimum of 9 semester hours per term. After completing all course requirements and registering for the required thesis/dissertation/project research credit hours, international students must take a letter to the Office of International Student Services verifying that they are required to register for at least 1 credit hour until they complete their research. **Failing to provide this documentation may result in a violation of their immigration status.** The summer academic semester is considered an authorized vacation. International students may choose to go to school full-time, part-time, or not at all during this semester, and will still maintain their legal status. Students must enroll for a minimum of 1 credit hour during the summer semester if they are completing their degree requirements during the semester.

Students who have maintained their legal immigration status may apply, through the Office of International Student Services, for one year of optional practical training based on the satisfactory completion of their degree requirements.

## 5.1 Registration through the Web

The University of Toledo offers registration through The University of Toledo website for students [[Register for Classes Using Banner Self-Service \(utoledo.edu\)](#)]. This is the preferred method of registration for all open courses up until web registration closes after the 5<sup>th</sup> calendar day of classes. If you know what courses you need to take from the list of your approved plan of study and wish to register over the website, you are free to do so without making an appointment to see your advisor. **If you wish to register for classes outside your plan of study you**

**must first secure the approval of your faculty advisor.** In addition, you will need to request that the Associate Director of Department Student Services place a copy of the newly approved courses in your file.

## 5.2 Registration at the Registrar's Office

The following procedure typically applies to late registration (from day 6-15 after the start of classes) or special permissions to take a course:

1. A course request form is available on the web at the following link: [Course Request form revised Jan 2016 \(utoledo.edu\)](#). Also, this form and other important forms can be found by following this link; [Resources and Important Forms \(utoledo.edu\)](#). You are expected to make an appointment with your Academic Advisor for course request approval.
2. If changes are to be made to your plan of study, you must see your advisor and request her or his approval.
3. There are several options for payment of fees as outlined at the following link [payment options \(utoledo.edu\)](#).

It is recommended that you do not put registration and scheduling of classes off to the last minute. Plan ahead and get your course request form approved (if taking classes outside your plan of study) as soon as possible. If you require permits or signatures to take a course, that may cause a delay in your registration potentially resulting in late registration Fees. Also, some courses may get canceled based on low enrollment figures.

Using the new, "Plan Ahead and Register" option in Student Self Service, students may now create a registration plan before registration opens by utilizing the 'Plan Ahead' feature. This feature allows students to plan out their semester schedule in advance of their registration date then, once their registration window opens, they can register for their classes directly from the plan. An overview of this feature is listed at the following site [Plan Ahead and Register option in Student Self Service.pdf \(utoledo.edu\)](#).

*Failure to plan on your part does not constitute an emergency on ours.*

## 5.3 Adding and Dropping a Course

### Can I add a class or register late?

The process of adding a class or registering late varies depending on when you add the class or register [ [Registration Frequently Asked Questions \(utoledo.edu\)](#) ]

**Within the first five calendar days of a new semester** — You may add a course or register late without permission from the instructor if you have the prerequisites as long as a seat is available. If there is no space available, you will need the signature of the **instructor** on the line where you listed the course on the course request form and you must go to the Registrar's Office.

**Between the 6th and 15th calendar days of a new semester** — You may add a course with the instructor's permission via the [Course Request and Seminar Request Form](#).

**After the 15th day** — Adding a course will require signatures from the instructor of the course and the Dean or designee from the student's College Office via the [Course Request and Seminar Form](#). Please note, deadlines will be shorter for summer semester or courses not meeting the full 15-week semester. Refer to the registration and important dates chart for specific deadlines at [Add/Drop/Withdraw Deadlines \(utoledo.edu\)](#). A late registration fee is assessed for initial registrations on or after the first day of the semester.

**Late Registration Fees are listed on the office of the Registrar web site at [Registration Frequently Asked Questions \(utoledo.edu\)](#) and currently as follows:**

- 1st - 3rd day of part of semester \$50
- 4th - 15th day of part of semester \$100
- 16th day to end of part of semester \$200
- After the semester \$500

For more information regarding late fee assessment, review the [Treasurer's Office website](#).

### **Can I drop a course or withdraw from a course after the semester starts?**

You may drop a course at the beginning of the semester during the drop period. After the drop period has ended for a term, you may choose to withdraw from a course during the withdrawal period. Refer to the [Add, Drop and Withdrawal page](#) for specific deadlines. A student may not add or drop a course beyond the indicated deadlines.

To DROP A COURSE any time during the first two weeks of the semester, you do not need approval and the course will not show up on your transcript. **Students will be responsible for drop charges, and all hours charged against the student tuition scholarship will be credited to the total scholarship to which the student would normally be awarded.** For the fall 2022 semester, add/drop course refund percentage are listed on [Fall Semester 2022 \(utoledo.edu\)](#).

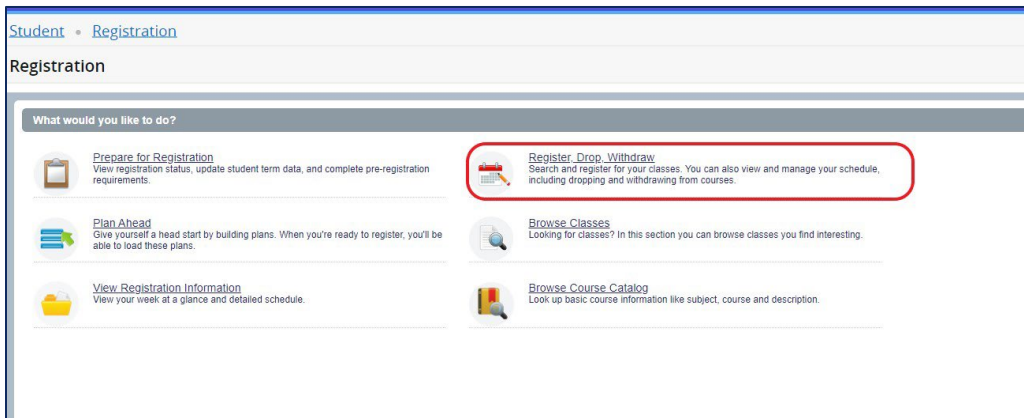
To WITHDRAW FROM A COURSE after the 15th calendar day to the last day of the tenth week of the semester, use the web page through myUT portal at [PetitionForOfficialWithdrawal2021.pdf \(utoledo.edu\)](#). The instructor's permission is not required. You will be given a grade of "W" on your transcript. After the tenth week, the student cannot withdraw from the class. **A Tuition Fees Waiver cannot be applied to any course from which you withdraw.**

Make sure you understand the difference between dropping and withdrawing from a class.

- A dropped course will be removed from your schedule and will not appear on your official transcript.
- Withdrawing from a course will result in a grade of "W," which will appear on your official transcript. A grade of "W" is not calculated into your grade point average (GPA). However, there are other implications of withdrawing from a course. (see below).

**Failure to drop or withdraw from a course that you have stopped attending may result in a grade of "F."**

You can drop or withdraw from classes online through [Register for Classes Using Banner Self-Service \(utoledo.edu\)](#) if you do not have any registration holds by choosing the "Register, drop, Withdraw" link on the registration homepage to begin (picture below). If you have a registration hold, you must submit a [Course Add/Drop Request form](#) or a [Course Withdrawal form](#). The form can be processed at Rocket Solution Central (RSC), located in Rocket Hall, Room 1200.



All requests to drop or withdraw must be submitted by the [deadlines](#) for that term. Contact Rocket Solution Central (RSC) at 419.530.8700 with questions.

## WHAT ARE THE IMPLICATIONS OF WITHDRAWING FROM A COURSE?

Once a withdrawal is processed, it cannot be rescinded. Based on the date of withdrawal, fees may or may not be adjusted. Since withdrawn courses reduce your enrolled hours, withdrawing from courses may have an adverse effect on financial aid benefits, scholarships, loan deferments, athletic eligibility, health insurance, veteran's benefits, degree requirements, or other areas. Contact Rocket Solution Central or your academic advisor if you are uncertain about how withdrawing may affect you.

## SECTION 6: Faculty Advisors, the Graduate Program Director, and the Associate Director of Department Student Services

The **Faculty Advisors** in the Mechanical, Industrial and Manufacturing Engineering Department help students decide upon a course of study and research area. After a student has been accepted for graduate study by the College of Graduate Studies and by the MIME department, the Graduate Director will normally be the initial advisor until the student and a professor (not necessarily the Graduate Director) have decided upon a course of study and research area. This professor will then be the student's permanent advisor. The advisor must be a full-time MIME faculty member. Such assignment of an advisor will normally be done during the first semester. When the student is prepared to select a permanent advisor, the student should fill out and submit the advisor/focus group assignment form, available on the MIME website at [Advisor/Focus Group Assignment \(utoledo.edu\)](http://utoledo.edu). This should be accomplished during the first semester of enrollment and no later than the second semester. A change of advisor later in the program is permitted, but a change can lengthen the program of study. A student's advisor will also normally be the supervisor of the thesis research.

A doctoral student is required to have a dissertation advisory committee consisting of at least five graduate faculty members, at least one of whom must be from outside the MIME department. The initial advisor for a doctoral student will usually be the Graduate Director. The student should visit with all department faculty members so that

a permanent advisor can be selected as soon as possible but not later than the second semester of registration. In consultation with her/his advisor, the student must form a doctoral advisory committee in order to take the Ph.D. qualifying exam. The purpose of the advisory committee is to help the student complete the program proposal, conduct the qualifying examination, and to evaluate and approve the dissertation research.

The advisory committee must have at least five members, at least one of whom must be outside the MIME department. As soon as this committee is formed, the Graduate Director must be notified and the Doctoral Plan of Study finalized. After successful completion of the qualifying examination, the student must prepare a dissertation proposal. The dissertation proposal will be presented to the advisory committee for their approval and if approved will be forwarded to the Director of Graduate Studies then sent to the College of Graduate Studies. As soon as the dissertation proposal is approved the student may begin the final phase of research.

The **Director of Graduate Studies** will be the temporary faculty advisor for all students until a permanent faculty advisor has been selected. In addition, the Director, in cooperation with the Graduate Advisory Committee, is responsible for the graduate programs within the MIME Department as well as the administration of the graduate policies described in this handbook. The Director also serves as a liaison between the MIME Department and the College of Graduate Studies. The Director supervises recruiting and admission efforts, coordinates graduate curriculum development, and provides advice to students on the implementation of graduate policies.

The **Associate Director of Department Student Services** ensures that registration and scheduling issues are handled effectively and efficiently, maintains all graduate records, keeps Plans of Study and all other forms (also available on the MIME website), and interacts with the students and MIME faculty.



## SECTION 7: Graduate Degree Procedures

### 7.1 General Requirements

It is the student's responsibility to be aware of his/her own academic progress relative to grade-point average and graduation requirements. Each student should review his/her own academic progress at least once a semester to make sure all requirements are being met. If a student has questions about his/her grades or graduation requirements, they should contact his/her academic advisor.

#### 7.1.1 Minimum Continuous Enrollment

Graduate students who are working on their project, thesis, or dissertation and/or who are using University facilities and services (i.e., the library, health services, consulting with faculty, computer services, laboratories, etc.), must register for a minimum of one graduate credit hour each semester. Access to certain other facilities and services, such as the Student Recreation Center and parking, will require additional user fees.

#### 7.1.2 Standards of Academic Performance

At the University of Toledo there are standards of academic performance which students must maintain. Students will be placed on probation and eventually suspended if they do not show improvement. To avoid probation and suspension, a graduate student must maintain (a) a grade point average of 3.0 on a 4.0 system for all courses completed, and (b) an average GPA of 3.0 for courses completed in the department of specialization. Students whose GPA falls below 3.0 are subject to loss of support and dismissal from the College of Graduate Studies.

Consult the College of Graduate Studies webpage for details on probation and suspension  
<https://www.utoledo.edu/graduate/currentstudents/references/AcademicStandards.html>

Only graduate courses in which a grade of C or better is earned can be counted toward degree requirements. Grades of C- or less do not count toward a degree but are included in the calculation of the GPA. **Students may be responsible for the charges associated with taking another course or repeating a course because of receiving a grade of C- or less.**

#### 7.1.3 Mathematics Requirement

Among the 30 hours required for the MS degree, a minimum of three (3) hours (or one course) must be taken in approved courses at the 5000 or 6000 level involving a concentration of advanced mathematics. The same courses may be used by Ph.D. students in selecting courses to satisfy the mathematics requirement in their program, if any. The MIME faculty recommend, but do not require, that MIME graduates should have knowledge of complex variables, differential equations, numerical analysis, probability and statistics, and linear algebra. These courses should not duplicate courses taken by the student in any previous training nor should they duplicate each other. Each student should select, with his/her advisor, courses for this requirement that will be most beneficial for the specialization area selected. The goals of the MS Mathematics requirements are:

- i) Ensure that the MS graduates have the minimal mathematics tools to perform research in the student's chosen area of specialization,
- ii) Assist the MS students who are interested in preparing for the Ph.D. Qualification Examination.

The Mathematics requirements for an MS degree from the MIME Department are included in the list of approved mathematics courses for MS students.

## 7.2 Master's Program

The information presented here is intended to assist you in meeting the degree requirements for the Master of Science degree in Mechanical Engineering (MSME) and the Master of Science degree in Industrial Engineering (MSIE). Additional details are given in the College of Graduate Studies Catalog. Your cooperation in following the procedures outlined here will help to ensure that all necessary requirements are met in a timely fashion.

## 7.2.1 Plan of Study

As soon as possible after admission to the Mechanical, Industrial and Manufacturing Engineering Master's program, a Master's Plan of Study form must be completed by each Master's student in consultation with the student's advisor. A work copy may be obtained at <https://www.utoledo.edu/graduate/forms/MasterPOS.pdf> for advisor's approval before the final typing of this form. The plan of study maps the entire MS program.

The program must include 30 hours of engineering coursework, thesis, or project, selected from those approved for graduate study (5000 level or above). Each plan of study must complete the following requirements:

<b>MS Degree Requirements</b>	<b>Thesis Option</b> (semester hours)	<b>Project Option</b> (semester hours)	<b>Coursework Option</b> (semester hours)
Focus Area Core Courses	6 or 9****	6 or 9****	9 or 9****
Mathematics Requirement (see approved course list)	3	3	3
Thesis/Project/Focus Area Elective Courses	9*	9**	9***
Any Approved Engineering or Mathematics elective	12 or 9****	12 or 9****	12 or 9****
<b>TOTAL</b>	<b>30</b>	<b>30</b>	<b>30</b>

\* 9 credit hours of thesis.

\*\* 6 credit hours of project and 3 credit hours of focus area elective course.

\*\*\* 9 credit hours of focus area elective courses.

\*\*\*\* For Computational and Experimental Thermal Sciences focus area.

Of the coursework credit hours required for graduation, a minimum of 12 semester credit hours (or four classes) of coursework must be at the advanced level (normally 6000). Thesis, project or independent study will not be included as part of the 6000 coursework requirement.

The plan of study for the MS degree must be filed before 16 hours of academic coursework have been completed. For full-time students this will normally require that the plan of study be filed before registration for the second term. An example of the plan of study for a master's student is in the appendix.

Students following a MS degree with a focus on Computational and Experimental Thermal Sciences:

Required courses include completing one of the following two Advanced Math courses:

- Advanced Engineering Math I - MIME 6000
- Advanced Engineering Math II - MIME 6100

and completing three courses from the approved core courses below:

- Intermediate Fluid Mechanics and Heat Transfer – MIME 6460
- Advanced Heat Transfer – MIME 6520
- Advanced Fluid Mechanics – MIME 6980
- Computational Fluid Dynamics I – MIME 6440
- Advanced CFD – MIME 6470
- Experimental Fluid Mechanics – MIME 6450

Students following a MS degree with a focus on Materials, Design and Manufacturing:

Required courses include completing one of the following two Advanced Math courses:

- Advanced Engineering Math I - MIME 6000
- Advanced Engineering Math II - MIME 6100

and completing two courses from the approved core courses below:

- Design of Experiments - MIME 6720
- Advanced Dynamics- MIME 6200
- Advanced Mechanics of Materials - MIME 5300
- Manufacturing Engineering - MIME 5060

Students following a MS degree in Industrial Engineering:

Required courses include completing one of the following two Advanced Math courses:

- Advanced Engineering Math I - MIME 6000
- Advanced Engineering Math II - MIME 6100

and completing the following two core courses:

- Design of Experiments - MIME 6720
- Manufacturing Engineering - MIME 5060

Course substitutions: It is understood that the first plan of study filed by a student may be subject to change as the student progresses. However, whenever a student's plan changes it is the student's responsibility to bring the College of Graduate Studies records up to date, especially at the time the student registers for the last time before completing the requirements for the degree. Changes to an approved Plan of Study should be submitted on the College of Graduate Studies form entitled "College of Graduate Studies: Plan of Study Course Substitution." This form is available on the College of Graduate Studies website at <https://www.utoledo.edu/graduate/forms/CourseSubPOS.pdf>.

The plan of study **must be typed**. The total number of credit hours listed in the plan of study must be equal to 30 credit hours. Any more or less will result in a rejection and return for correction. Students may register for additional coursework, thesis or project, but only a total of 30 credit hours are to be listed on the Plan of Study.

## 7.2.2 Thesis, Project or Course-Work Degree

Graduate students in the MIME department may elect to pursue a thesis, a project or coursework-only Master's degree. Research and Teaching assistants who have received stipend support for one or more terms at any time during their graduate study are required to complete the thesis degree. A thesis is awarded as 9 credit hours toward the minimum requirement of 30 credit hours with registration under MIME 6960. Projects involve work at a smaller scale and are awarded as 6 credit hours of registration under MIME 6920 toward the minimum requirement of 30 credit hours.

### 7.2.3 Summary of Steps toward Graduation

- i) Admission
  - File Application Form, transcripts, and three (3) letters of recommendation. (TOEFL or IELTS or Duolingo English Test or PT scores when required).
- ii) Registration
  - Meet with the MIME Director of Studies Graduate or permanent advisor to register for initial courses.
- iii) Advisor
  - Select an advisor if the thesis or project degree option is selected and complete and submit the advisor selection form found at: <https://www.utoledo.edu/engineering/mechanical-industrial-manufacturing-engineering/graduate/advisorandfocusgroup.html>. Full-time students pursuing a coursework degree (first semester registration of 9 or more credits) will be assigned permanent advisors before the end of the first semester in consultation with graduate director.
  - Part-time students (First semester registration of 8 or fewer credits) will be assigned permanent advisors before the end of second semester in consultation with the graduate director.
- iv) Academic Standards
  - At all times during the program, the student must maintain a GPA of at least 3.0 in (a) all graduate coursework and (b) in all graduate MIME courses.
- v) Plan of Study
  - A plan of study must be filed before completion of 16 credit hours. Thus, full-time students should file before completion of their first term. Forms are available on the College of Graduate Studies web site. <http://www.utoledo.edu/graduate/currentstudents/academicprogramforms/>
  - The Plan of Study may be changed subject to the approval of the advisor, the Graduate Director, and the College of Graduate Studies.
  - **Restriction on changes:** A student cannot change from thesis-option to coursework only or project option, neither can he/she change from the project option to coursework only option if they received teaching/research assistantship stipend or tuition scholarship for at least one term.
- vi) Advisory Committee (not required for coursework option)
  - The advisory committee membership and thesis/project title must be filed before the conclusion of the second semester on the "Graduate Research Advisory (GRAD) Committee Approval and Assurance form" available at [GRADform.pdf \(utoledo.edu\)](#). For the MS thesis option, the student must also submit a "Defense Acceptance and Intellectual Protection" form at <https://www.utoledo.edu/graduate/forms/IntellectualProtection.pdf> to the Graduate School. A copy of the notice of thesis/project form prepared by the department must be placed in the student file. Forms are available on the College of Graduate Studies website: <http://www.utoledo.edu/graduate/currentstudents/academicprogramforms/>
- vii) Application for Degree
  - Must be filed no later than the fourth week of the semester during which degree is to be awarded; forms are available at the College of Graduate Studies in University Hall or on the College of Graduate Studies website:  
  
<http://www.utoledo.edu/graduate/currentstudents/graduation/>
- viii) Thesis/Project Defense (\* areas apply for thesis option)
  - i) A complete hard copy of thesis/project accompanied by a letter of transmittal from advisor must be distributed to the advisory committee no less than two weeks prior to exam.

- ii) Submit a [defense announcement request](#) form not less than two (2) weeks prior to the defense and see the Department Secretary to arrange room.
- iii) Prepare a presentation, not longer than 40 minutes, utilizing appropriate visual aids (e.g. PowerPoint presentation). The results of your thesis/project research must be presented to and approved by your advisory committee during a final oral examination. The public should be invited to the thesis/project defense.
- iv) Submit completed thesis approval and the defense acceptance and intellectual protection forms:

<http://www.utoledo.edu/graduate/forms/ApprovalofThesis.pdf>

<http://www.utoledo.edu/graduate/forms/IntellectualProtection.pdf>

- v) Following a successful exam, committee members sign thesis/project approval forms (available on the College of Graduate Studies website:

[Approval of Project form \(utoledo.edu\)](#) or [Approval of Thesis form \(utoledo.edu\)](#)

- vi) Submit a copy of the College of Graduate Studies Thesis Approval/Project approval form, and an abstract of your thesis/project to the office of the Associate Dean of Graduate Studies of the College of Engineering.

**vii) Submit the original to the College of Graduate Studies following the Electronic Thesis/ Dissertation (ETD) Process Overview on the College of Graduate Studies Website:**

[http://www.utoledo.edu/graduate/currentstudents/etd/etd\\_process.html](http://www.utoledo.edu/graduate/currentstudents/etd/etd_process.html)

You need to complete the *OhioLINK* ETD Center submission process and upload final document (successfully defended in PDF file format with fonts embedded) and any supplementary files to *OhioLINK*

[https://etd.ohiolink.edu/apexprod/rws\\_olink/r/1501/1?clear=0,1,5,10,20,21,1001](https://etd.ohiolink.edu/apexprod/rws_olink/r/1501/1?clear=0,1,5,10,20,21,1001) by the posted deadline for the semester in which you are graduating

<https://www.utoledo.edu/graduate/forms/Deadline%20flyer.pdf> Your file will be transferred to *ProQuest* from *OhioLINK* electronically, and you must select that option during the submission process.

- viii) Submit an electronic PDF copy to the Associate Director of Department Student Services.
- ix) It is your responsibility to provide your advisor and committee members with copies of your thesis.

**ix) Departure from the MIME Department**

- i) Check with your advisor about what information you need to leave in your lab for other students to continue your work.
- ii) All keys obtained from the Key Control Office must be returned to the Key Control Office as they are in your name.
- iii) Return all keys to desks and filing cabinets to the secretary in the MIME department office.
- iv) Remove all personal belongings from your desk; leave the desk and filing cabinets unlocked when you leave.
- v) Leave a forwarding address for forwarding mail.

## 7.3 Doctoral Program

The information presented here is intended to assist you in meeting the degree requirements for the Doctor of Philosophy in Engineering Science degree. Additional details are given in the College of Graduate Studies graduate student handbook [Graduate Student Handbook 2021-2022 \(utoledo.edu\)](https://www.utoledo.edu/graduate/forms/DocPOS.pdf). Your cooperation in following the procedures outlined here will help to ensure that all necessary requirements are met in a timely fashion.

### 7.3.1 Plan of Study

As soon as possible after admission to the MIME Ph.D. Program, and before completing the First Semester, each doctoral student must complete a Plan of Study for the Doctoral Degree form in conjunction with the student's doctoral examination committee. The fillable PDF form is available on the College of Graduate Studies website at: <https://www.utoledo.edu/graduate/forms/DocPOS.pdf>. The form **must be typed** before submission. An example of plan of study for a Ph.D. student is in the appendix.

The Doctoral Program Plan of study includes the coursework to be completed, the proposed dates for the qualifying exam, and the membership of the advisory committee. A minimum of 15 credit hours of advanced graduate coursework (8000 level) is required. In addition, specific core courses may be required by the student's research focus area. A minimum registration of 60 hours beyond the master's program is required for the Ph.D. degree. This number includes an allowance for dissertation hours (MIME 8960). The student and his/her advisor should reach agreement on the entire program before the plan is submitted for approval.

Specifically, the student is required to complete the Plan of Study for the Doctoral Degree Form following instructions listed below (Please refer to the form in the appendix for the following references and instructions):

#### Section 1

- a) Complete the top portion with name, Rocket ID, First Semester Enrolled,
- b) College: Engineering; Degree: Ph.D.; Major: Mechanical Engineering or Industrial Engineering
- c) Time limitation for degree (credit applied towards the doctoral degree must be earned within seven years immediately preceding the time the degree is awarded)
- d) Expected Graduation
- e) Academic background including degree, date awarded, institution, and major for bachelor's and master's degrees

#### Section 2: List all graduate courses required for the degree

- a) List a minimum of 15 credit hours of coursework beyond the 6000 level
- b) List a 45 Dissertation Research hours (MIME 8960).
- c) The program total listed on the Plan of Study for the Doctoral Degree form should equal 60 credit hours. **Any more or any less will result in a rejection and return for correction.** Students may register for additional coursework and dissertation research, but only a total of 60 credit hours are to be listed on the Plan of Study.

#### Section 3: Residency Requirement

Doctoral students satisfy the doctoral residency requirement by completing a total of 18 hours of coursework taken over 3 consecutive semesters. Enrollment in a summer semester is not required to maintain continuity, but credits earned during summer terms could count toward the 18 hours required for residency.

Section 4: Additional program degree requirements as per the plan of study for the Doctoral degree:

- a) Check the Qualifying Examination box
- b) List the proposed Semester of Candidacy

When the above has been accomplished, complete and submit the plan of study for the Doctoral degree available at

<https://www.utoledo.edu/med/depts/radther/pdf/Ph.D.%20sample%20POS%20Medical%20Physics.pdf> to the Director of Graduate Studies for approval. Both you and your advisor should keep a copy and a copy should be submitted to the Director of Graduate Studies to be included in your permanent file. After approval by the Graduate Program Director, the plan will be sent to the Associate Dean for Graduate Studies of the College of Engineering and then to the College of Graduate Studies for their approval.

Early selection of a permanent advisor and early filing of the plan of study is necessary to assure that the graduate program is planned from the outset. It should be noted that circumstances that require modification of the plan of study are not uncommon. Indeed, there are cases where it may be appropriate to change courses and in some cases advisors or committee members. If there are significant changes, a new plan of study should be submitted. For minimal changes, a Plan of Study – Course Substitution form may be used available at [Plan of Study Course Substitution form \(utoledo.edu\)](#) .

### 7.3.2 Ph.D. Course Program

A satisfactory course program in all focus areas is developed jointly by the student and the Dissertation Advisor and the Doctoral Advisory committee of the student, subject to the approval of the Graduate Director. The student is expected to meet the following minimum guidelines.

#### Minimum Number of Course Credits

A minimum of 15 credits of regular (non-independent study) courses taken for a letter grade beyond the MS degree is required of which 12 credits must be departmental courses. All required courses are at the advanced level (normally at the 8000 level).

Students entering the program with a Master's degree need a total 60 hours to complete their degree. This includes a 45 credit hours of dissertation (8960) and 15 hours of coursework.

Students entering the direct Ph.D. program with a BS degree need 90 credits to get their Ph.D. This includes 45 credits of Ph.D. dissertation (MIME 8960). The remaining of the 90 credits are typically 45 credits of coursework.

- Other courses taken may include non-department courses, independent study courses, and courses taken S/U.
- Twenty seven (27) of the above 45 course credits are regular departmental courses beyond their bachelor's degree, and at least 21 credit hours are at the 6000/8000 level courses for a letter grade at the advanced level (normally at the 6000/800 level). All required courses are at the advanced graduate level as determined by the department. Other courses taken may include courses not listed as departmental courses and independent study courses.



- Departmental courses include those listed as MIME courses, and those related in subject matter and approved by the Dissertation Advisor as being equivalent to "departmental" courses with the numbering level set according to the MIME standards for numbering courses.
- If graduate level coursework or a master's degree is completed at another school, the student may be able to transfer up to 50% of the required course credits by submitting an Application for Credit Transfer [TransferCred.pdf \(utoledo.edu\)](#). The work must have been done after the completion of bachelor's degree and at a school acceptable to the College of Graduate Studies. Only courses in which the student received a grade of B or better will be considered.
- The College of Graduate Studies Admissions Office will determine the admissibility of credit from a foreign university.

### Other Minimum Course Requirements

The Ph.D. degree in the MIME department is a specialized degree, but the department has a breadth requirement for the Ph.D. degree since it builds on a broad base of physics and mathematics. The program therefore normally includes core courses required of Master's students as well as at least 6 credits of regular (non-independent study) coursework in advanced physics, mathematics, or computer science courses, depending on the area of research. Candidates with primarily experimental projects should include at least three credits on experimental techniques. This requirement is waived if suitable courses have already been taken at MS level. In addition to the minimum 15-credit requirement, all Ph.D. candidates must participate each semester in the graduate seminar MIME 8930.

- Deviations from these guidelines are expected, but must be requested by petition and approved by the department Graduate Director. As a general rule, the courses should consist primarily of graduate courses in engineering and sciences, although the candidate's Ph.D. committee may approve a limited number of upper division undergraduate courses outside of engineering and sciences, as long as such courses contribute to a strong and coherent program.

### 7.3.3 Ph.D. Candidacy Qualifier

#### Purpose

The Ph.D. Candidacy Qualifier provides an assessment of whether the student is prepared to carry his/her Ph.D. program to its conclusion and involves an evaluation of the student's preparation in core areas fundamental to his/her area of concentration.

#### Scope

The Ph.D. Candidacy Qualifier is an instrument designed to give the student's Doctoral Research Committee an opportunity to evaluate the students' academic abilities and promise. The exam seeks to assess the students' **research performance**, their understanding of the requisite engineering fundamentals, their capacity to think clearly, and their ability to express their technical knowledge.

## Format

Students can complete the Ph.D. degree with a concentration in Mechanical Engineering or Industrial Engineering. The Ph.D. with a concentration in Mechanical Engineering can be completed in one of two research focus areas: Materials, Design and Manufacturing focus area and Computational & Thermal-Fluid focus area.

The MIME Ph.D. qualifier in Mechanical Engineering includes earning a grade of (A-) in three classes in either of the two focus areas (1) Materials, Design and Manufacturing or 2) Computational and Experimental Thermal Sciences. The MIME Ph.D. qualifier in Industrial Engineering includes also earning a grade of (A-) in three classes. These classes must be taken by all students (with or w/o a prior MS degree) who are seeking a Ph.D. degree in MIME at the University of Toledo. The required courses are listed below. These classes are currently offered at least once a year.

### MATERIALS, DESIGN, AND MANUFACTURING(MDM) CORE COURSES:

Students must complete the mathematics course (Advanced Engineering Mathematics I – MIME 6000/8000) and two courses from the list below (a total of 3 classes):

- Design of Experiments (Design of Experiment - MIME 6720/8720)
- Dynamics & Vibration (Advanced Dynamics- MIME 6200/8200)
- Deformable Body Mechanics (Advanced Mechanics of Materials - MIME 5300)
- Manufacturing Engineering (Manufacturing Engineering - MIME 5060)

### THERMAL-FLUID CORE COURSES:

Students must complete the mathematics course (Advanced Engineering Mathematics I – MIME 6000/8000) and two courses from the list below (a total of 3 classes):

- Heat Transfer (Intermediate Fluid Mechanics and Heat Transfer - MIME 6460/8460)
- Fluid Mechanics (CFD I – MIME 6440/8440 or Advanced CFD – MIME 6470/8470 or Experimental Fluid Mechanics - MIME 6450/8450)

### INDUSTRIAL ENGINEERING CORE COURSES:

Students must complete the mathematics course (Advanced Engineering Mathematics I – MIME 6000/8000) and the following two courses (a total of 3 classes):

- Design of Experiments (Design of Experiment - MIME 6720/8720)
- Manufacturing Engineering (Manufacturing Engineering - MIME 5060)

### STUDENTS MUST FOLLOW THE FOLLOWING STEPS:

**A.** Students must select their Ph.D. advisor (**Principal Dissertation Advisor**) by the end of their first academic semester by completing and submitting the form at <https://www.utoledo.edu/engineering/mechanical-industrial-manufacturing-engineering/graduate/advisorandfocusgroup.html>. The Principal Advisor must be a

member of the College of Engineering Graduate Faculty. If the Principal Advisor is not a member of the MIME faculty, at least one of the advisors (co-advisor) must be associated with the MIME Department. A Senior Research Associate may serve as a co-advisor if prior approval is obtained from the Associate Dean of Graduate Studies of the College of Engineering. The selection of a Ph.D. advisor requires agreement by both the student and the faculty member.

**B.** Students must form their doctoral advisory committee (Ph.D. committee) by the end of their second semester. The [GRAD form](#) must be filled out and signatures of the committee members must be obtained. The student's Ph.D. committee must consist of at least five members. The chair of the committee will be the candidate's principal advisor. The other members usually will be the co-advisor (if any), faculty members or experts in a related field, with at least one committee member outside the focus area and one member outside the department. Also, by the end of their second semester, students should decide on a plan of study, get approval from the doctoral advisory committee chaired by the principal advisor, and submit the approved plan of study to the Associate Director of Department Student Services for further processing.

**C.** The committee members will check and verify whether the student has fulfilled grade requirements (A-) in the selected courses after students finish their second semester. Proper signatures to be obtained.

**D.** The student's doctoral committee can decide (before beginning of the 3<sup>rd</sup> semester) what courses students must take if the grade requirement is not fulfilled in each area/course.

**E.** Students must present to their committee by the end of their 3<sup>rd</sup> or 4<sup>th</sup> semester at MIME UToledo about **their research topic (i.e. research questions, literature review, and preliminary data if available)**. The committee can probe fundamental understanding of the students related to their research. This is different than research progress and can focus on fundamentals in a student's area of study. Committee members will decide whether 1) the student is on the right track in research. 2) Whether the student has fundamental understanding related to the research area by completing [research progress assessment](#) form to evaluate your fundamental understanding of your research area. If the committee members deem appropriate, they can suggest to students to take classes related to their research area and to improve fundamental understanding of the students. This can include an independent study with a research advisor. The following form will be used to assess the students.

If a student does not satisfy grade requirements in core classes or other classes suggested by the Ph.D. committee, the committee must assess student's research performance, fundamental understanding, and grades to decide whether the student can continue in the Ph.D. program. The Ph.D. committee members will vote to make the final decision.

**Students will be considered Ph.D. candidates after this step.**

**F.** Research Proposal Presentation: Students should present their research progress to their committee during a formal proposal defense.

**G.** Students can schedule their dissertation defense a semester following their successful proposal defense. Summer can count as a semester.

*Note: If students change their Ph.D. advisor after their qualifying exam requirements are fulfilled, the student must select a new advisor and form a new committee and then can resume from step E. The new advisor and the student will decide about taking new classes and the committee might suggest that the student should take some other classes as well. If students change their advisor any time before fulfilling the qualifying exam, the student must find a new advisor and work with him/her to start from step B.*

### Administration

The student's doctoral examination committee will be responsible for administering the qualifier including recommendation to the Graduate Director for final approval.

### Announcement of Exam Results

Results of the qualifying exam will be available approximately two weeks after the date of the exam. The Director of Graduate Studies will contact individual examinees in writing immediately after the student's doctoral examination committee decides.

All grievances concerning the qualifying exam will be filed with the Director of Graduate Studies and will be reviewed by the student's doctoral examination committee. The Chair and/or the Director of Graduate Studies will meet with the individual examinees immediately after the review of the grievance by the doctoral examination committee has been conducted in order to discuss the results.

Students who do not successfully complete the qualifying examinations will ordinarily not be permitted to continue in the Ph.D. program. Such students may petition the department for special consideration. This petition must be made within one month after the date examination results have been mailed out. The student's doctoral examination committee chaired by the faculty advisor, and in consultation with the Graduate Director and/or the Chair will then either (1) confirm the examination results (the student will then no longer be considered as a participant of the Ph.D. program) or (2) reverse the decision; or (3) recommend that the student be allowed to take the examination again, possibly subject to specific performance standards.

### 7.3.4 Ph.D. Candidacy Requirements

Doctoral candidacy requires selection of an academic advisor (step **A** above), formation of a doctoral dissertation committee (step **B** above) satisfactory performance in the doctoral qualifying examination (steps **A** through **E** above), filing of an approved doctoral program plan of study, and maintaining good academic performance as specified in the MIME Department Graduate Student Handbook.

When the above requirements have been met, the student may file his/her application for doctoral candidacy <https://www.utoledo.edu/graduate/forms/CandidacyDoctoral.pdf>. The department requires that the application be filed within one year of the time the doctoral qualifying examination is passed. Doctoral students must have established candidacy for the doctoral degree before presenting and defending dissertation research.

Candidacy for the Ph.D. degree begins officially with the approval of the application and lasts for a period of five years.

### 7.3.5 Ph.D. Dissertation Requirements

As indicated above, the student must write a dissertation proposal and present it to the doctoral dissertation committee and successfully defend it. The signatures of the committee members on the candidate's approval of dissertation form [Approval of Dissertation form \(utoledo.edu\)](#) indicate approval of the dissertation research and represent the final certification of its adequacy.

### Doctoral Dissertation Proposal

The proposal documents the study through a brief introduction to the subject stating the dissertation purpose and including a list of references, which will indicate that the student has performed a thorough literature search. The proposal serves to:

1. Provide an opportunity for the student's doctoral examination committee to offer suggestions and references on the work conducted and the work to be conducted.
2. Provide a safeguard against duplication of research effort.

Therefore, it is important that the dissertation proposal be written and not after the research has been completed. The student will present and successfully defend his/her dissertation proposal.

After approval by the Doctoral Examination Committee, the advisor will submit the thesis proposal to the Department Graduate Director for review. The dissertation proposal format consists of the following items:

1. A title page giving the proposed title of the dissertation, the student's name, the names of the members of the Doctoral Examination Committee, and the date.
2. The proposal organized to present the study's purpose, scope, methodology, significance and expected results. The proposal should be as concise as possible.
3. A list of literature references.

The final document should be sent to the associate director of department student service in the PDF format. A copy of the proposal should be placed in the student file for review by faculty.

### Dissertation Defense

Ph.D. students must have established candidacy for the Ph.D. degree before presenting and defending dissertation research. The dissertation defense is an oral examination intended to verify that the research represents the candidate's own contribution to knowledge and to test his or her understanding of the research. The examination is normally open to the public and should not exceed three hours in length. A passing candidate in the oral examination is expected to:

1. Present a comprehensible account of the research and its potential consequences to scholars whose special areas of interest lie outside the candidate's area of research;
2. Demonstrate his or her ability to explain and defend the dissertation and its contribution to knowledge before the Doctoral Examination Committee and other experts in the field; and
3. Demonstrate the capabilities for which a Ph.D. degree is awarded by answering satisfactorily any questions considered pertinent by the examining committee.

As stated above, the student's doctoral examination committee must consist of at least five members. The chair of the committee will be the candidate's principal advisor. The other members usually will be the co-advisor (if any) and faculty members or experts in a related field with at least one committee member outside the focus area and at least one other member outside the department.

The dissertation defense should be scheduled at least two weeks prior to the examination to allow a notice to be advertised in the department and arrange the date and time and reserve a room. The student will provide the Doctoral Dissertation Committee Chairperson with the exam schedule, Department and University dissertation approval forms for the exam, and an abstract. The student must provide draft copies of the dissertation to members of the examination committee at least two weeks before the exam.

### Dissertation Publication

The Doctoral Dissertation Committee (with the Principal Dissertation Advisor as the chair) has the responsibility of supervising the candidate's research work and ensuring that high standards of performance are maintained. To that end, it is the candidate's responsibility to keep the Committee members informed about his or her research progress. A satisfactory completion of the research work is usually implied if a minimum of two technical papers are accepted for publication in professional archival journals. The signatures on the candidate's dissertation represent the final certification of its adequacy.

## 7.3.6 Summary of Steps toward Graduation

1. Admission: File an application form, transcripts, and 3 letters of recommendation (GRE and TOEFL scores when required).
2. Registration: Meet with the MIME Director of Graduate Studies to register for initial courses.
3. Advisor: Select an advisor during first semester (full-time students) by completing and submitting the form at <https://www.utoledo.edu/engineering/mechanical-industrial-manufacturing-engineering/graduate/advisorandfocusgroup.html>.
4. Plan of Study: Specifies coursework, language, proposed dates of qualifying exam, and doctoral examination membership on the form available at [DocPOS.pdf \(utoledo.edu\)](#). The department requires that this form be filed before completion of the first semester of post-master's study.
5. Qualifying Exams: The student's doctoral examination committee chaired by the faculty advisor administers the Ph.D. qualifying exam. The exam is arranged through your advisor and should occur after 30 to 45 of graduate coursework hours. The exam assesses the student's competence in conducting research.
6. Complete the Research proposal, arranged by advisor and committee.
7. Admission to Candidacy: The admission to candidacy form needs to be filed after the qualifying exams are passed. Forms are available at <http://www.utoledo.edu/graduate/forms/CandidacyDoctoral.pdf>.
8. Defense acceptance an intellectual form completed and submitted. The form can be found at [IntellectualProtection.pdf \(utoledo.edu\)](#)
9. Application for degree. Apply online through the [myUT](#) portal. Use the "Apply to Graduate" link located in the My Records section of the Toolkit menu. The form must be filed no later than the second week of the semester during which degree is awarded.
10. Dissertation Defense
  - I. Complete dissertation accompanied by a letter of transmittal from advisor must be distributed to the doctoral examination committee not less than two weeks prior to exam.
  - II. Fill out the [defense announcement request](#) not less than two (2) weeks prior to defense. Also see the Department Secretary to arrange a room.
  - III. Prepare a no longer than 40 minute presentation utilizing appropriate visual aids (slides, & etc.).

- IV. Following successful exam, committee members sign dissertation approval form available at: [Approval of Dissertation form \(utoledo.edu\)](#).
- V. The final, corrected, document in PDF format must be approved by the College of Engineering and uploaded on OhioLINK no later than the last day of classes for the semester that the degree is awarded. The process overview for ETD submission can be found on the College of Graduate Studies website at [http://www.utoledo.edu/graduate/currentstudents/etd/etd\\_process.html](http://www.utoledo.edu/graduate/currentstudents/etd/etd_process.html).
- VI. One electronic PDF version of the final corrected copy must be submitted to the MIME office.
- VII. It is the responsibility of the student to provide each committee member with a copy of her/his dissertation.

#### 11. Departure from the MIME Department

Check with your advisor about what information you need to leave in your lab for other students to continue your work.

- I. Check with your advisor about what information you need to leave in your lab for other students to continue your work.
- II. All keys obtained from the Key Control Office (work control) must be returned to them as they are in your name.
- III. Return all keys to desks and filing cabinets to the secretary in the MIME office.
- IV. Remove all personal belongings from your desk; leave the desk and filing cabinets unlocked when you leave.
- V. Provide a physical forwarding address for forwarding mail, to the MIME department secretary.
- VI. Provide an email forwarding address, to your advisor, the MIME Director of Graduate Studies, and the MIME department secretary.

### 7.3.7 Getting a master's degree along with Ph.D.

The student must have completed a minimum of 30 credits of graduate coursework, successfully completed the qualifier exam and passed his/her doctoral dissertation proposal. Of the above graduate coursework required, a minimum of 12 semester credit hours of coursework must be at the advanced level (normally 6/8000).

Students who will receive a master's degree along with a Ph.D. receive their master's degree in the end of the academic semester that they complete the above requirements for a master's degree. Students must apply for graduation and meet the requirements of the College of Graduate Studies for their master's degree.

Students who pursue a master's degree along with their Ph.D. must submit to the department an approved plan of study. The student academic advisor, the department's Director of Graduate Studies, the Associate Dean of Graduate Studies of the College of Engineering, and the College of Graduate Studies must approve this program of study.

## SECTION 8: Academic Policies

### 8.1 Absence from Class

The Mechanical, Industrial and Manufacturing Engineering Department expects students to meet attendance requirements in all courses. Attendance requirements vary depending on the course and the professor. It is the student's responsibility to know what each professor requires. If a student finds it necessary to be absent from a laboratory class or exam due to illness of emergency nature, it is the student's responsibility to notify the professor in advance or as soon as possible thereafter. Make-up procedures are at the discretion of each professor.

If a student wishes to be absent from the class for a religious holiday or observation, the student must notify the instructor within the first three weeks of class of the specific dates on which they will be absent. The faculty are encouraged not to schedule examinations or mandatory exercises that require class attendance on commonly recognized religious holidays. For further information regarding department policy on conflicts between academic requirements and religious holidays, contact the Graduate Director.

### 8.2 Problems with a Course

Problems with a MIME course, whether of an academic or nonacademic nature, should be dealt with as soon as possible. It is the student's responsibility to contact the appropriate person for the course. The first contact by the student should be the faculty member directly responsible for the course. If the issue cannot be resolved with the professor, the student should then discuss the issue with his/her academic advisor. Any issue not resolved at this point can be taken to the Graduate Director, who will attempt to provide assistance.

### 8.3 Minimum Course Load

Students receiving any form of financial assistance are expected to maintain full-time standing. A full-time student may not reduce his or her course load to fewer than 9 credits (during a semester) unless permission has been received from the Graduate Director.

### 8.4 Course Audits

A student may audit a course with the approval of the instructor and the Graduate Director or an academic advisor. Auditors are expected to attend class with regularity and complete assigned coursework. Auditors may participate in the class and take examinations only as permitted by the instructor. Audited courses carry no degree credit and are not graded.

Audited courses do not count toward the minimum number of credits needed for full-time standing for the semester but do count toward the term's credit load for fee purposes. The deadline to change a course from a credit basis to an audit basis, or from an audit basis to a credit basis, is the same as adding or dropping any regular course and is specified in the University Academic Calendar. Audited courses may affect eligibility for financial aid (students should consult an advisor in the Office of Student Financial Services). Instructional fees for audited courses are the student's responsibility and are not covered by the fee waiver granted to students receiving financial aid.

### 8.5 Grade of Incomplete

A grade of Incomplete or "IN" may be reported for a student who has carried a course with a passing grade until near the end of the semester and then, because of illness or other unusual and substantiated circumstances beyond the student's control, has been unable to take or complete the final examination or to complete some limited amount of work.



A grade of Incomplete will not be given to a student who misses a final examination unless it is proven to the instructor that the student was prevented from attending, as indicated above. In absence of such proof, if the semester work convinces the professor that the student cannot pass, the grade will be an F.

A student who receives a grade of Incomplete must complete the course no later than the close of the next semester of his/her residence at UT. If not completed during this time, the Incomplete will lapse into an F (failing).

## 8.6 Final Examination Schedule

The semester's final exam schedule includes one two-hour period for each course of two or more credits. This period is used for an exam or other instructional activities as deemed appropriate by the professor and the focus area instructional unit offering the course.

Take-home final exams are due at the scheduled period. Final exams or other final period activities cannot be scheduled during the last two weeks of classes.

The time of the final period may be changed only with prior approval of the dean. Seminar courses, independent study and directed study courses are exempt from these regulations. Students enrolled in these courses should contact their professors regarding final evaluation requirements.

Students should attempt to avoid having more than two exam periods within 24 hours. If a student has more than two final exams within 24 hours, the professor may, within guidelines adopted by the University faculty, reschedule to avoid hardships. Rescheduled exam periods shall be of the same general nature and quality as the original period. If the final exam schedule places too many exams in a 24-hour period, the student should talk to his/her professors regarding possible exams schedule changes. This must be done prior to the end of the eighth week of the semester.

## 8.7 Independent Study Coursework

Independent Study (MIME 6990/8990) is intended to be used in a one-on-one situation. Typically, a faculty member guides a student, who works independently of other students, on a project or topic of interest. Certain rules govern enrollment in an independent study course:

- A student must be in good standing.
- No more than 6 credits of Independent Study work may count toward the MS requirement.
- A letter grade must be received if the credits are to be applied toward the required minimum coursework.

Prior to enrollment in an Independent Study course, a student must obtain the permission of the faculty member supervising the course by having the faculty member fill out and sign a Seminar Course (Independent Study) Form. This form must be approved by the student's Academic Advisor and a copy turned in to the Associate Director of Department Student Services. A brief resume of attainment, written by the student at the end of the course, should be retained in the student's academic file.

Exception to the above requirements may be made only with the permission of the academic advisor or the Director of Graduate studies.

## 8.8 Research Outside of Supervision by a MIME Faculty Member

All graduate students in the MIME Department at UToledo should consult all their research activities (while at UToledo) with their graduate advisor or MIME's graduate director (if such advisor has not yet been identified). Graduate students should NOT involve in conducting research and/or submitting/publishing abstracts, conference proceedings, oral/poster presentations, and journal publications without obtaining written permission from their academic advisor or MIME's graduate director (if there is no graduate advisor assigned yet). Violation of this policy may result in termination of student's support from the department (TA, RA, or tuition waiver) and possible expulsion of the student from the program. If a written approval is obtained to be involved in research activities outside of the supervision by a MIME faculty member, the student should NOT use the University of Toledo's affiliation in their product. This policy applies to ALL MIME graduate students including a) those who are receiving TA, RA, or tuition waiver from the department and b) those who are NOT receiving any support from the department.

## 8.9 Graduate Seminar Series:

All MIME graduate students must register for the MIME graduate seminar during their course of study at UToledo. This includes registration for the graduate seminar for all the semesters that the students are enrolled in MIME's graduate program at UToledo. Registration for and obtaining satisfactory grade in MIME graduate seminars (during all semesters) is mandatory and partial requirement to obtain an MS and/or Ph.D. degree from the MIME department at UToledo. The MIME faculty member who oversees the graduate seminars will set the criteria in the beginning of each semester on how students can obtain a satisfactory grade. When a student is off campus for a co-op or other reasons, they should communicate with the MIME's graduate director to obtain a permission for not registering for the graduate seminars. This policy applies to ALL MIME graduate students including a) those who are receiving TA, RA, or tuition waiver from the department and b) those who are NOT receiving any support from the department.

## SECTION 9: General Information

### 9.1 Advisory Committee

MS thesis, MS project and Ph.D. students are required to have an advisory committee.

**MS Thesis and MS project Students** - Early in the program the student and his/her advisor should select faculty members to serve on the advisory committee. A minimum of three members of the UToledo graduate faculty including the advisor, who serves as chair, is required. At least half of the members must have an appointment in the MIME Department. The purposes of the committee are to provide advice to the student and his/her advisor on the conduct of the research; to read, offer suggestions and approve the manuscript; and to assess the success of the oral defense of the thesis or project. Once the proposed members of a thesis committee have agreed to serve, the membership should be reported to the College of Graduate Studies on a Graduate Research Advisor (GRAD) Committee Approval & Assurances Form

([http://www.utoledo.edu/graduate/files/GRAD\\_Form\\_fillable\\_03\\_05\\_2012.pdf](http://www.utoledo.edu/graduate/files/GRAD_Form_fillable_03_05_2012.pdf)) along with any additional forms as necessary. A copy of GRAD Committee Approval & Assurances Form should be returned to the department for the student's file. The form must be filled in completely or it could significantly delay the graduation of the student. The department requires that this be completed before the fourth registration.

**Ph.D. Students** - The student and his/her advisor in consultation with the graduate advisor should select a doctoral examination committee before the end of the third or the fourth semester of study. The membership is designated on the Doctoral Proposal along with the Graduate Research Advisory (GRAD) Committee Approval & Assurances Form available at [http://www.utoledo.edu/graduate/files/GRAD\\_Form\\_fillable\\_03\\_05\\_2012.pdf](http://www.utoledo.edu/graduate/files/GRAD_Form_fillable_03_05_2012.pdf). A copy of the Doctoral Proposal should be given to the department office for the student's file. The minimum membership is five members of the graduate faculty, including the advisor who serves as chairperson. The majority of the members must have appointments in the college of engineering and at least one member must have his faculty appointment outside of MIME Department. The members of the advisory committee should represent the principal subject areas of the student's program. The committee functions include: offering advice on the formulation of the plan of study, participating in and administering the qualification examination, assisting in the selection and prosecution of the research program to include criticizing and approving the dissertation and assessing the success of the oral defense of the dissertation.

## 9.2 Thesis or Project or Dissertation Defense

Working under the supervision of his/her advisor with advice from her/his committee, the student conducts the research that will become the thesis/project/dissertation. At an early stage of the work, the student and advisor should agree on a detailed outline for the document (The student may want to review the outline with the remainder of his/her committee as well). As the research nears completion, the student should develop a draft of the document and submit it to his advisor for review as a complete document or chapter by chapter. (The College of Graduate Studies has produced a website to aid in thesis and dissertation preparation available at [http://www.utoledo.edu/graduate/currentstudents/thesis\\_dissertation/](http://www.utoledo.edu/graduate/currentstudents/thesis_dissertation/).) The advisor will review the manuscript, provide editorial criticism, and make suggestions for revision and reorganization. The process of criticism and revision between the student and advisor should continue until both are satisfied that the document is complete in all respects, is well organized, well written, and of professional quality.

Once the document has reached that stage, it is ready for wider criticism. The student should prepare a letter of transmittal to the doctoral examination committee asserting that her/his advisor is satisfied with the form and substance of the document, as well as asking them to both read and criticize the document and to participate in the defense. The student is responsible for coordinating an examination time that is satisfactory for each member of the committee and for reserving a room at the proper time. The student should arrange a time and place for the examination no sooner than two weeks after the document has been distributed to the advisory committee.

The MS thesis/project and Ph.D. dissertation defense is a public examination. The oral examination or defense for a thesis, project and dissertation usually lasts about two hours. The room should be reserved for three hours and should accommodate the committee and a reasonable number of guests. The students should prepare a defense announcement request form (available on the MIME graduate program website at <https://www.utoledo.edu/engineering/mechanical-industrial-manufacturing-engineering/graduate/announcementrequest.html>) and submit it online to the department secretary who will prepare an announcement, and distribute it to departmental faculty and graduate students, interested faculty in other departments, and the Associate Director of Department Student Services at least two weeks before the exam. The student should prepare an oral discussion of the document that can be completed in about 40 minutes, leaving time for discussion. Keep in mind that the committee has read the document. Although most of the guests will not have read it, it is not appropriate to attempt to read segments of the document as part of the presentation. The presentation should describe the approach and summarize the findings. Visual aids that facilitate communication should be prepared.

Following the presentation and discussion, the examination committee will meet privately with the student. This will allow discussion of their criticism of the document and/or to test the student's knowledge of other aspects of the program. Finally, the committee will excuse the student so that they can deliberate the outcome of the exam. The student will be informed that they have passed or has not passed the examination. If the examination was not passed, the student will be informed as to the deficiencies and as to how and when they can be corrected. If the examination is passed, the committee will sign the thesis/project/dissertation Approval Form (<http://www.utoledo.edu/graduate/forms/ApprovalofThesis.pdf>) or approval of dissertation (<http://www.utoledo.edu/graduate/forms/ApprovalofDissertation.pdf>) form at the conclusion of the successful exam. The committee may recommend that certain parts of the manuscript be revised before affixing individual signatures. Note that the student remains responsible for making corrections and/or revisions to the manuscript to the satisfaction of the committee. Once the document has been revised and corrected, the committee will sign the approval of thesis/project/dissertation form which will be forwarded to the Associate Dean of Graduate Studies of the College of Engineering for approval before transmittal to the College of Graduate Studies. A complete and

correct PDF copy of the final manuscript must be submitted to OhioLink (<https://www.utoledo.edu/graduate/currentstudents/etd/>) Prior to graduation

### 9.3 Thesis and Project Format

The master's thesis must be typed to meet the style and format requirement of the College of Graduate Studies. A set of instructions for preparing the thesis manuscript can be obtained at the College of Graduate Studies website at [http://www.utoledo.edu/graduate/currentstudents/thesis\\_dissertation/](http://www.utoledo.edu/graduate/currentstudents/thesis_dissertation/). All students are strongly encouraged to submit a format review request prior to the electronic submission process (send a pdf copy of thesis to [etdmc@utoledo.edu](mailto:etdmc@utoledo.edu)). The master's project should follow the same guidelines. The student has the sole responsibility for preparing the manuscript.

An approval of Thesis/Dissertation form must be included with the electronic copy submitted to the College of Graduate Studies (<http://www.utoledo.edu/graduate/forms/ApprovalofThesis.pdf>) or (<http://www.utoledo.edu/graduate/forms/ApprovalofDissertation.pdf>).

### 9.4 Publication of Research Results

The research topics addressed in master's theses and doctoral dissertations are expected to be of sufficient interest and importance to merit publication in a refereed technical journal. As a result, Master's students completing a thesis, or in some cases a project report, as well as doctoral students completing a dissertation, are expected to publish the results of their work in a technical journal. The paper or papers resulting from such research should list the major advisor and, depending on their contributions, members of the examination committee as co-authors. To this end, masters and doctoral students should consider the preparation of a separate manuscript(s) in a format adhering to the requirements of the target journal(s) to be one of the requirements for the degree.

### 9.5 Academic and Non-Academic Misconduct Policy

The Mechanical, Industrial and Manufacturing Engineering Department is committed to encouraging a sense of professionalism and a desire to adhere to the highest ethical standards in all its students. The MIME department has a responsibility to create an atmosphere in which professional attitudes can be cultivated. Each student has a responsibility to adhere to the highest standards of professional conduct, avoiding not only impropriety, but also even the appearance of impropriety. Improper conduct, both personal and academic, is incompatible with a career in the engineering disciplines. The MIME department will enforce the University of Toledo policies and standards for academic honesty and integrity. Those procedures describe the actions which the University may take in response to student misconduct, define the academic and non-academic conduct which is prohibited, and outline the procedures which are to be used in resolving allegations of misconduct. It is the student's responsibility to become familiar with the University of Toledo Policy on Graduate Student Academic Dishonesty (Policy # 3364-77-01) [https://www.utoledo.edu/policies/academic/graduate/pdfs/3364\\_77\\_01.pdf](https://www.utoledo.edu/policies/academic/graduate/pdfs/3364_77_01.pdf) This policy is listed *verbatim* in appendix 1.

It is important to note that different professors conduct classes in different ways. For example, one professor may allow students to discuss some homework problems and even work together on some problems while other professors will not allow this. Thus, it is very important to find out each professor's policy in the first class period.

On occasion a professor has alleged that a student was committing an act of academic dishonesty when the student was innocent. Perhaps the student was just staring someplace in space and the professor interpreted it as looking at someone's paper. It is not true that professors are always trying to accuse students. It is just very difficult for anyone to tell on the spot exactly what is going on. From the professor's point of view, he or she would

rather not have even a hint of academic dishonesty occurring. Here are some situations, which could be construed as academic dishonesty and should be avoided, even though they may not appear as an offense:

1. During a test, do not loan your classmate a ruler, eraser, pencil, calculator, or etc. This could be construed as collaboration.
2. Do not ask someone to pick-up a dropped pencil -- the instructor may think you two might be talking about the test. Just raise your hand.
3. If you need to glance around when thinking, just look up at the ceiling.
4. When working on a homework problem with a friend, it is important to know the 'line' where, on one side, the two of you are helping to Master the subject and on the other, where one is doing the problem for both. Different professors have different policies and it is important to get this clarified early.

Penalties may include a zero on the test or homework, a failing grade in the test, probation, suspension, or expulsion, and all carry a letter in the student's permanent file. The penalty is very stiff. Please take the time to read the official policy on academic dishonesty in appendix 1.

Each student must also adhere to the University's nonacademic standards of conduct. Violation of these rules may be determined to indicate personal characteristics incompatible with education in the MIME department. Examples of such activities are listed below (this is not an inclusive list of all possible violations of the Non-Academic Standards):

1. Falsifying applications, forms, or records used for admission or other purposes by the MIME department.
2. Failing to be cooperative and honest in any investigation or hearing conducted under the Academic Standards.
3. Threatening to or committing acts of violence.
4. Stealing, damaging, defacing, or diverting to personal use (without permission) any property belonging to others.
5. Violating computer usage policies established by the University Computer Center
6. Possessing or trafficking in illegal drugs or other substances of abuse or participating in drug diversion.
7. Failure to respect the right of other students, faculty, and staff to be free from illegal harassment and/or discrimination.

## LEARNING OUTCOMES

### MS in Mechanical Engineering

- 1) Demonstrate technical proficiency in their focus area topics
- 2) Apply advanced engineering mathematics and/or statistical principles to solve engineering problems in one of the ME specialty areas
- 3) Demonstrate ability to conduct a literature review
- 4) Explain course projects in one of the ME specialty areas clearly and concisely in written and oral formats
- 5) Thesis or project option: explain their research clearly and concisely in written and oral formats
- 6) Thesis or project option: generate high quality engineering research

### MS in Industrial Engineering

#### Learning Outcomes

- 1) Demonstrate technical proficiency in their focus area topics
- 2) Apply advanced engineering mathematics and/or statistical principles to solve engineering problems in one of the IE specialty areas
- 3) Demonstrate ability to conduct a literature review
- 4) Explain course projects in one of the IE specialty areas clearly and concisely in written and oral formats
- 5) Thesis or project option: explain their research clearly and concisely in written and oral formats
- 6) Thesis or project option: generate high quality engineering research

### Ph.D. in Engineering with a concentration in Mechanical Engineering

PLO 1) Demonstrate technical proficiency in their focus area topics.

PLO 2) Deliver clear and concise written and oral presentations for doctoral level course projects.

PLO 3) Deliver clear and concise written and oral presentations of their doctoral research.

PLO 4) Generate high quality engineering research that is original, significant and consequential, and is publishable in high quality journals, book chapters, and conference proceedings.

PLO 5) Contribute to research proposals in collaboration and / or under the guidance of the faculty advisor.

PLO 6) Teach undergraduate engineering courses.

## Ph.D. in Engineering with a concentration in Industrial Engineering

PLO 1) Demonstrate technical proficiency in their focus area topics.

PLO 2) Explain doctoral level course projects clearly and concisely in written and oral formats.

PLO 3) Explain their doctoral research clearly and concisely in written and oral formats.

PLO 4) Generate high quality engineering research that is original, significant and consequential, and is publishable in high quality journals, book chapters, and conference proceedings.

PLO 5) Participate in research proposal writing to fund their research

PLO 6) Teach undergraduate engineering courses.

## 9.6 Student Societies in Mechanical, Industrial and Manufacturing Engineering

Student sections of professional societies are available for you to become a member in the Mechanical, Industrial and Manufacturing Engineering Program and the College of Engineering. Active participation in these societies is a great way to make friends, become more involved in the Engineering College, and network and make contacts with industry. In addition, there are Engineering College honorary societies, the Association of MIME graduate students, and the University of Toledo Graduate Student Association whose members are graduate students from all UToledo graduate programs.



### American Society of Mechanical Engineers (ASME)

The ASME Student Section at UToledo is the student section of the national professional society of the American Society of Mechanical Engineers. ASME activities include meetings generally at noon every other Wednesday, guest speakers on various topics of interest, industrial tours, sponsorship of the Mechanical Engineering Picnic held on the last day of classes in June, no cost admission to all ASME national conferences, and many others. It is highly recommended to join ASME [for only \$15 per year and you get a great magazine] so that you can participate in these activities. In addition, if you are a student member when you graduate, your first year's dues as an ASME Associate Member are half of the normal membership and you are automatically upgraded to associate member instead of having to apply for membership. Each year in March, ASME sponsors Regional Student Conferences [RSC] in each region. UToledo is in Region V that includes Ohio, Michigan, West Virginia, Ontario, and the western half of Pennsylvania. There are many fun and educational activities at this conference including meeting ASME members from other schools. Check the MIME study lounge (Room NE-1050) and the ASME Office (Room NI-4026) for more information about ASME.

### Institute of Industrial Engineers (IIE)

The Institute of Industrial Engineers is the national professional society in Industrial Engineering. The University of Toledo has a student section of IIE which is open to all engineering students. Student section activities include meetings with guest speakers on various topics of interest, industrial tours, co-sponsorship of the MIME Picnic held on the last day of classes in June and many other advantages. It is highly recommended for majors in Industrial Engineering to join IIE. Check the MIME study lounge (Room NE-1050) and the IIE Office (Room NI-4026) for more information about IIE.

### Society of Automotive Engineers (SAE)

SAE is also the UToledo Student Section of the national professional organization. SAE Student Section activities include design, fabrication, maintenance, and performance testing of the vehicles for the SAE Formula competition, and super-mileage competition. Check the Mechanical Engineering study lounge for information about SAE.

### Other Societies in Engineering - Not Just Mechanical, Industrial and Manufacturing Engineering

The College of Engineering also has several student societies open to all engineering students regardless of their departmental affiliation such as the Ohio Society of Professional Engineers (OSPE), the Society of Black Engineers (SBE), and the Society of Women Engineers (SWE). Information concerning these societies can be obtained on the organizational bulletin boards on the first floor. Three social engineering societies exist within the College of Engineering. Phi Sigma Rho is an engineering sorority [female], Triangle is an engineering fraternity [male], and Theta Tau is the co-ed professional engineering fraternity. Further information can be obtained during the respective rush periods or on the organization's bulletin boards in the first-floor hallway.

### The Graduate Student Association (GSA)

The Graduate Student Association is an organization formed to assist and serve graduate students in many ways at UT. Its primary aims are to secure the representation of graduate students on University committees, recognize graduate students for outstanding achievement and service, and establish a forum for discussion and communication of issues of importance to graduate students. The offices for GSA are located in the Student Union. Contact the GSA office to obtain a list of the services or assistance that GSA offers.

### The Association of MIME Graduate Students (AMGS)

The Graduate Student Association of the MIME (Mechanical, Industrial, and Manufacturing Engineering) Department at the University of Toledo was founded in December 2019 and is on the web at [Association of MIME Graduate Students \(AMGS\) - The University of Toledo | Facebook](#)

## 9.7 Practical Training for International Students

The United States Department of Homeland Security (DHS) permits international students who have maintained their legal immigration status to receive a specified amount of practical training with U.S. industry. It is the department's sincere desire to see that international students are able to get the maximum benefit from this training opportunity. In order to derive the maximum possible benefit from this training, it is important that the student be able to devote all their efforts to their industry position. As a result, it is the policy of the MIME Department not to issue permission for such training until the student has submitted an **APPROVED DRAFT** of their thesis, project, or dissertation. For MS students selecting a coursework-only option, permission will not be issued until students are in their last semesters. Exceptions to this policy require the approval of (a) the major advisor, and (b) the Graduate Program Director or the department Chair. Such exceptions are rarely granted. Processing of practical training requests takes some time; therefore, students are advised to consult the International Students Services for the appropriate deadline.

## 9.8 Library and Computer Facilities

The University has an excellent facility in the Carlson Library and all graduate level students whether on scholarship or assistance or other support function may reserve for their personal use a carrel in the library for study purposes. Care must be taken in leaving personal items at the carrel location. There is a smaller, more specific McMaster Engineering Library, located in Palmer Hall, which offers assistance with access to scientific and technical databases and literature search.

Graduate students may apply and hold for as long as they are students on the campus a computer account number by which they may access the University mainframe from PC terminals located at several locations on the campus. In addition, PC computers are available in several College of Engineering PC lab locations to which graduate students have automatic access.

## 9.9 Mail

All graduate students will be assigned a mailbox. However, mail sent to graduate students should be addressed to:

MIME Department, MS 312  
The University of Toledo,  
Toledo, Ohio 43606-3390

Students' mail will be placed in student's mailboxes located adjacent to MIME Student Services Office by the elevators.

## 9.10 Keys

Keys for access to the labs and the office location assigned to the graduate students on support must be obtained ordered by the departmental secretary and picked up by the student at the Key Control office. All Key requests must be approved by the student's advisor. The Department will collect a \$25 security deposit from each student for each key they request. The deposit will be refunded after the student returns the key to the Key Control Office. Students who have completed a request for a key and fail to pick them up will be assessed a \$25.00 fee per key. These keys are assigned on a discretionary and as needed basis. Graduate students do not have a right to access any of the departmental or college areas or offices other than their own. All keys must be returned to the Key

Control Office prior to leaving the university. **Grades and transcripts will be withheld from individuals who have not returned keys.**

## 9.11 Campus Resources

Every full-time student at The University of Toledo is required to pay a general fee. This money is used for extra services like the student recreation center, football games, basketball games, and anything else that is so-called "free." Some of these services along with those that are provided independent of the general fee are described below. Other offices/services listed below are important ones you will likely need to visit such as Rocket Solutions.

### Information Technology

The IT department provides many support services to staff, faculty and students to enhance their working and educational experience here at UToledo. Contact them for account or computer issues or visit their website for FAQ's or discounts on personal computer purchase.

Email: [ithelpdesk@utoledo.edu](mailto:ithelpdesk@utoledo.edu)

Phone: 419-530-2400

<http://www.utoledo.edu/it/>

### Night Watch Campus Escort Service

Although UToledo is considered a very safe campus, it is nevertheless wise to use the escort service when walking alone in the dark to your car, dorm, nearby apartment, or any other destination within reason. The service originates at the Recreation Center, Library, UToledo Community Technical College [as well as other locations if prearranged] and is free of charge.

Phone: 419-530-3024

### Career Services

When job hunting, you will first want to register with the Career Services Office. They have a wealth of information including an online interactive database where you can find jobs, post your resume and research job openings. They can give you a practice interview and help you prepare your resume. These jobs include on-campus, off-campus, part-time as well as full-time before and after graduation.

Student Union Room 1533

Phone: 419-530-4341

<https://www.utoledo.edu/career/>

### Engineering Career Development Center

Nitschke Hall, Room 1040

Phone: 419-530-8050

<https://www.utoledo.edu/engineering/co-op-and-careers/>

### Counseling Center

The Counseling Center is designed to help you deal with any emotional or personal problems you may encounter. The center is staffed by psychologists and doctoral level graduate students in counseling who can help you through homesickness, failing a class, family problems, roommate conflicts, abuse, and many other problems.

Rocket Hall Room 1810

Phone: 419-530-2426 –

<http://www.utoledo.edu/studentaffairs/counseling/>

## Student Health and Wellness – University Health Center, Main Campus

The medical center that is available to students is top notch! The doctor visits are free, but you do have to pay for any medications or lab work. This is an excellent service that should be utilized if you are not feeling well. The Student Medical Center is conveniently located on the southwest side of Campus between the Law School and Rocket Hall and across from Academic House and International House.

Phone: 419-530-3451

1735 West Rocket Dr., Entrance #3

<https://www.utoledo.edu/studenthealth/>

## Off Campus Student Services

This office was set up to benefit students who live off campus. They offer a free "How to Live off Campus" guide, shuttle bus maps and schedules, cost comparison sheets, roommate assistance, and advice for roommate and landlord conflict resolution.

Student Union Room 1532

Phone: 419-530-8521

Email: [getinvolved@utoledo.edu](mailto:getinvolved@utoledo.edu)

<http://www.utoledo.edu/studentaffairs/osi/commuter/>

## Office of Residence Life

The Office of Residence Life deals mainly with UT's residence halls. They can give you information about your residence contract, your meal plan, any leadership or employment opportunities, and even a campus map! Visit their website at

Phone: 419-530-2941

Email: [residencelife@utoledo.edu](mailto:residencelife@utoledo.edu)

<http://www.utoledo.edu/studentaffairs/reslife/index/>

## Office of International Student & Scholar Services

The OISS provides assistance and services to international students at The University of Toledo, helping students transition to life at UToledo and in the United States. Serves as a resource for orientation, visa requirements, on-campus and off-campus housing, banking and international student health insurance.

Snyder Memorial Room 1000

Phone: 419-530-4229

email: [oisss@utoledo.edu](mailto:oisss@utoledo.edu)

<https://www.utoledo.edu/cisp/international/>

## University Police

There are many safety precautions taken around this campus. There are new, brighter lights, emergency telephones, patrolling police officers, and the campus escort service just to name a few. Also, UToledo Police are full-time police officers who have full arrest powers on and off campus.

Public Safety Center 3333 Dorr St

Emergency Response: 911

Police: 419.530.2600

<https://www.utoledo.edu/depts/police/>

### Parking Services

Parking Services, also available through your UTAD account, where you go to register your car for a parking permit or pay for or appeal a parking ticket. Most services are available through their website.

Student Union Room 1550

Phone: 530-4100

Email: [parking@utoledo.edu](mailto:parking@utoledo.edu)

<http://www.utoledo.edu/parkingservices/>

### Rocket Solution Central

Rocket Solution Central (RSC) (<https://www.utoledo.edu/rsc/>) is your one-stop service location for assistance with financial aid, student accounts and registration questions.

Rocket Hall room 1200

Phone: 419-530-8700

Email: [rocketsolutioncentral@utoledo.edu](mailto:rocketsolutioncentral@utoledo.edu)

### Student Legal Services

Student Legal Services is a general practice law firm that provides licensed attorneys to UToledo students to advise and/or represent them in their personal legal matters. The Student Legal Services Fee covers access to Student Legal Services

<https://www.utoledo.edu/studentaffairs/studentlegalservices/>

Student Union room 3504

Phone: 419-530-7230

Email: [studentlegal@utoledo.edu](mailto:studentlegal@utoledo.edu)

## 9.13 Important Dates to Know

The following dates and times during the semester may prove useful. For more details on important dates, please visit the provost webpage for academic calendars at <https://www.utoledo.edu/offices/provost/calendar/>.

### First three days of the semester

You can add a class without requiring the instructor's signature provided that there is space available in the class or use the web registration.

### Friday of the second week of classes

This is the last day to drop a class and it will not show up on your transcript. You get a percentage of your tuition back depending on when you drop the course. See more information available at the Registrar site.

For graduating students in their second to last semester of classes

Students must apply for graduation by filling out an application for graduation

(<https://www.utoledo.edu/offices/registrar/pdfs/GraduationApplication.pdf>) and submitting it to the College of Graduate Studies by the 20th day of the semester during which the degree requirements are expected to be completed and graduation actually takes place.

Friday of the tenth week of classes

This is the last day to withdraw from a course. This is done at the Registrar's Office and you do not need anyone's approval. You do not even have to tell the instructor, however to be courteous, you might want to do that. You will get a "W" on your grade card, but this does not affect your grade point average if you do not have too many.

Fifth week [approximately]

Advanced registration for next semester begins.

## 9.14 Frequently Asked Questions

- **Where do I get an unofficial (personal) copy of my UToledo transcript?**
  - Through MyUT (Myut.utoledo.edu) or the link on the office of the registrar webpage at <http://www.utoledo.edu/offices/registrar/transcripts.html> or by phone at 847.716.3005.
- **Where do I get or have sent elsewhere an official UToledo transcript?**
  - Through MyUT (Myut.utoledo.edu) or the link on the office of the registrar webpage at <http://www.utoledo.edu/offices/registrar/transcripts.html> or by phone at 847.716.3005.
- **Where do I go to have my name changed on my official UToledo records?**
  - Through MyUT (myut.utoledo.edu) → update personal information.
- **Where do I go to have my address changed on my official UToledo records?**
  - Update your address through your MyUT account (Myut.utoledo.edu).
- **Whom do I contact to have my GPA certified for auto insurance discounts or non-UT scholarships/loans?**
  - Through MyUT (myut.utoledo.edu) → Enrollment verifications
- **Whom do I (an international student) contact to obtain a letter for the Immigration & Naturalization Service (INS) regarding "practical training?"**
  - Contact the department secretary to prepare a letter from the department chair
- **Where do I (an international student) go if I have a question about my visa status?**
  - Office for International Students Services, Snyder Memorial room 1000
- **Where do I go to get an official check on my progress toward completion of graduation requirements?**
  - Associate Director of Department Student Services (530-8204)

- **Whom do I see about an add/drop, pass/fail registration, audit registration?**
  - Rocket Solutions Central, Rocket Hall 1200, 419-530-8700.
- **Whom do I see about a credit change for a registered course, withdrawal from school?**
  - Associate Director of Department Student Services (419-530-8204)
- **What do I need to do to obtain a letter for Financial Aid regarding my standing?**
  - Through MyUT.UToledo.edu → financial aid enrollment certification form
- **Where do I go to have UToledo enrollment history certified for an outside agency?**
  - Through MyUT.utoledo.edu → enrollment verifications
- **Where do I go if I have a question about residence status for tuition?**
  - Rocket Solutions Central, Rocket Hall 1200, 419-530-8700
- **Whom do I see to discuss the Board of Trustees Tuition Scholarship?**
  - The College of Graduate Studies
- **Where do I go if I need help with my studying or test-taking skills?**
  - Learning Enhancement Center, Carlson Library Room 0200, 419-530-2176
- **Where do I go if I need help deciding about a career other than engineering?**
- **Where do I go if I need personal counseling?**
  - University Counseling Center, University Heal Center (530-2426)
- **When and where do I submit my application for graduation?**
  - Submit the application through MyUT.utoledo.edu → Apply to Graduate
- **When and where do I submit my proposal for admission to the Ph.D. candidacy?**
  - Candidates for the Ph.D. degree are expected to submit a Ph.D. proposal to the Associate Director of Department Student Services following their successful completion of the Ph.D. qualifying exam in consultation with their academic advising committee.
- **How do I access engineering software?**
  - You may use any of the open computer labs in the engineering buildings. In addition, you may access UT Virtual Labs. The Virtual Lab environment is a system of servers that host virtual computers. These virtual computers can be connected to by a computer a modern browser HTML5 or running the VMWare View client. Learn more about virtual labs at <https://www.utoledo.edu/it/frequently-asked-questions/virtual-lab/>.
- **What if I can't log on?**
  - You would log on in the computer labs or the virtual labs using your UTAD username and password. If you are having trouble with your UTAD account, the IT helpdesk can be contacted by phone (419.530.2400)

# Appendices

## APPENDIX 1

### The University of Toledo Policy on Graduate Student Academic Dishonesty (Policy # 3364-77-01)

[https://www.utoledo.edu/policies/academic/graduate/pdfs/3364\\_77\\_01.pdf](https://www.utoledo.edu/policies/academic/graduate/pdfs/3364_77_01.pdf)

Academic dishonesty will not be tolerated. Among the aims of education is the acquisition of knowledge and development of the skills necessary for success as an educator or in another profession. Activities inconsistent with these aims will not be permitted. Students are responsible for knowing what constitutes academic dishonesty. If students are uncertain, for example, about what constitutes plagiarism or cheating, they should seek the instructor's advice.

Examples of academic dishonesty include, but are not limited to:

1. Plagiarizing or representing the words, ideas or information of another person as one's own and not offering proper documentation.
2. Giving or receiving, prior to an examination, any unauthorized information concerning the content of that examination.
3. Referring to or displaying any unauthorized materials inside or outside of the examination room during the course of an examination.
4. Communicating during an examination in any manner with any unauthorized person concerning the examination or any part of it.
5. Giving or receiving substantive aid during the course of an examination.
6. Commencing an examination before the stipulated time or continuing to work on an examination after the announced conclusion of the examination period.
7. Taking, converting, concealing, defacing, damaging or destroying any property related to the preparation or completion of assignments, research or examination.
8. Submitting the same written work to fulfill the requirements for more than one course.

While academic integrity is particularly the responsibility of the student, the faculty members also have a responsibility. Assignments and tests should be constructed and proctored so as to discourage academic dishonesty. Faculty members are expected to inform their students explicitly as to what materials and procedures are authorized for use in the preparation of assignments or in examinations (e.g., the use of calculator, computer, 'ponies', text materials, etc.). Should cases of academic dishonesty be found among students, the instructor may choose to counsel the student, or the following sanctions may be imposed:

1. The student may be assigned an F for the work in question.
2. The student may be assigned an F for the course. In this case the instructor should inform the dean and the student of this action. The dean will make certain that the student receives the F grade and is not permitted to withdraw from the course.
3. The student may be placed on probation or suspended for some definite period of time, dismissed, or expelled by the dean if either the seriousness of the offense or a record of repeated offenses warrants it. A notation that such a sanction has been imposed will be made part of the student's permanent record. It is expected that the dean will consult with the instructor and the student making such a judgment, and that the dean will notify the student of the sanction imposed and of the appeals procedure.



A student found to be academically dishonest by a faculty member may appeal according to procedures approved by the respective colleges. The procedures for making a final appeal to the Student Grievance Committee may be found in the Student Handbook.

## APPENDIX 2

### EXAMPLE OF A PLAN OF STUDY OF A MS STUDENT PURSUING A THESIS OPTION

MIME 6000	Advanced Engineering Math	3 hrs
MIME 6xxx	Core course	3 hrs
MIME 6xxx	Core course	3 hrs
MIME 6xxx	Elective (or Core course)	3 hrs
MIME 6xxx	Elective course	3 hrs
MIME 5xxx	Elective course	3 hrs
MIME 5xxx	Elective course	3 hrs
MIME 6960	Graduate Research and Thesis	9 hrs
MIME 6930	Graduate Seminar (every semester)	0 hrs

---

TOTAL		30 hrs
-------	--	--------

## APPENDIX 3

### EXAMPLE OF A PLAN OF STUDY OF A Ph.D. STUDENT

MIME 8xxx	Course 1	3 hrs
MIME 8xxx	Course 2	3 hrs
MIME 8xxx	Course 3	3 hrs
MIME 8xxx	Course 4	3 hrs
MIME 8xxx	Course 5	3 hrs
MIME 8960	Dissertation research	45 hrs
	Credit from MS degree	30 hrs
MIME 8930	Graduate Seminar	0 hrs (every semester)
<hr/>		
TOTAL		90 hrs