HANDBOOK OF MASTER’S PROGRAM IN MECHANICAL ENGINEERING (MS/ME) & MASTER’S PROGRAM IN ADVANCED MANUFACTURING AND ENTERPRISE ENGINEERING (MS/AMEE):

ACADEMIC POLICIES & PROCEDURES

This Handbook provides supportive information following the official UTSA Graduate Catalog. In case any information in the Handbook conflicts with the Catalog, please refer to the Catalog.

Department of Mechanical Engineering

The University of Texas at San Antonio

Fall 2019
I. Areas of Study
The Department of Mechanical Engineering offers advanced coursework integrated with research leading to the Master’s degree in Mechanical Engineering (MS/ME) or Master’s degree in Advanced Manufacturing & Enterprise Engineering (MS/AMEE). The MS/ME program has three concentrations: Thermal and Fluid Systems, Robotics and Control, and Mechanics and Materials. The MS/AMEE program primarily focuses on Manufacturing Systems and Enterprise Engineering. The MS degrees will be awarded to candidates who have displayed an in-depth understanding of the subject matter and demonstrated the ability to make an original contribution to knowledge in their field of specialty.

II. Program Administration
The Master’s degrees in Mechanical Engineering and Advanced Manufacturing & Enterprise Engineering reside within the Department of Mechanical Engineering. The Graduate Studies Committee is responsible for curriculum enhancement, program development and promotion, student recruitment, admission, and on-going program review and provides input to the department Chair and the graduate faculty of the department.

The Graduate Advisor of Record (GAR) is appointed by the department Chair. With the assistance of the Program Coordinator, the GAR is responsible for the routine administration of the program, advising students, maintaining records, and representing the Department in matters related to the program. Questions about degree requirements and academic policies should be directed to the Graduate Advisor of Record or the Program Coordinator.

III. Admission Requirements
The minimum requirements for clear admission to the MS in Mechanical Engineering and MS in Advanced Manufacturing & Enterprise Engineering degree programs are as follows:

- Students must meet the University-Wide Admission Requirements as outlined in the graduate catalog
- Official transcripts of all undergraduate and graduate coursework
- Official Graduate Record Examination (GRE) scores
- TOEFL/IELTS scores (if applicable)
- A statement of purpose/research experience
- Two professional and/or academic letters of recommendation
- Résumé or Curriculum Vitae (CV)

IV. Financial Support and Graduate Assistantships
Financial support may be obtained through various sources and disbursed as a stipend, tuition support, and Assistantship. Please be advised that unless a written agreement is made between the funding source and student for a designated time period, financial support and assistantships are not guaranteed each semester or year of your degree program.

In order to receive a stipend, tuition support, or a competitive scholarship, the student must be registered for a minimum of 1 credit hour (including during the summer semester). Students who
have been offered an assistantship must be registered a minimum of 6 credit hours during the fall
and spring semesters, and 3 credit hours during the summer semester. The only exception to the
assistantship requirement is if it is the student’s final semester and their registration does not
meet the minimum credit hour requirement.

- **Stipend**: If you receive a stipend, this means that the funding can be disbursed as
  either a lump sum or on a monthly basis during the designated semester. Stipends
  are provided by faculty members; therefore, the details of the disbursement are their
discretion. If there is an account balance, the stipend will always be applied first
and foremost to the account balance.

- **Tuition Support**: Tuition support is generally provided by faculty members, and is
given to students specifically for their tuition. If the amount of the tuition support
exceeds the account balance, then the excess funding will not be paid to the student.
Faculty members can also choose to provide partial tuition support, and the student
will be responsible for their remaining account balance.

- **Graduate Assistantships**: Financial support may be secured through a Research
  Assistantship (RA) or a Teaching Assistantship (TA). Appointments are no more than
  “half-time” or 20 hours of service per week. Generally, RA and TA appointments are
  either 10 or 20 hours per week, but it is up to the discretion of the faculty member or
  Mechanical Engineering Department the specifications of the appointment. If a student is
  appointed for 20 hours per week, then they are qualified for in-state tuition. The financial
  support for RAs is provided by individual faculty members from research grants, while
  support for TAs is provided by the department. Applicants are encouraged to contact
  faculty members to seek RA positions.

- **Competitive Scholarships**: Competitive Scholarships are generally offered on a yearly
  basis by the Department of Mechanical Engineering, The Center for Advanced
  Manufacturing and Lean Systems (CAMLs), and the College of Engineering. Recipients
  of a competitive scholarship earn qualification for in-state tuition, in addition to the
  funding amount. Competitive scholarships are awarded on a competitive basis dependent
  on merit credentials.
V. Degree Requirements and Program of Study
The minimum number of semester credit hours required for the degree is 30 for the thesis option and 33 for the non-thesis option.

Advanced Manufacturing & Enterprise
Thesis/Non-thesis Option

A. Required topical courses selected from the following (15 credit hours):
- EGR 5213  Topics in Systems Modeling
- EGR 5233  Advanced Quality Control
- EGR 6033  Linear and Mixed Integer Optimization
- ME 5503  Lean Manufacturing and Lean Enterprises
- ME 5563  Computer Integrated Manufacturing
- ME 5573  Facilities Planning and Design
- ME 5583  Process Improvement and Variability Reduction
- ME 5603  Advanced Manufacturing Systems Engineering
- ME 5643  Green and Sustainable Manufacturing and Enterprise Systems
- ME 5703  Lean Product Development and Service Systems
- ME 6543  Machine Learning and Data Analytics
- ME 6563  Flexible Automation and Manufacturing Systems

B. Prescribed Elective Courses approved by student's advisor
(9 credit hours for thesis/15 credit hours for non-thesis)

C. Degree candidates must complete one of the following course requirements:
- ME 6983  Master’s Thesis (thesis option)
- ME 5973  Special Project (non-thesis option)

Suggested Electives
- CE 5613  Environmental Chemistry
- CE 5623  Advanced Treatment Processes for Water Quality Control
- CE 5703  Special Topics in Hydraulics and Hydrology
- CE 5733  Special Topics in Environmental Engineering
- CS 5233  Artificial Intelligence
- CS 5253  Expert Systems
- CS 5623  Simulation Techniques
- EE 5143  Linear Systems and Control
- EE 5243  Topics in Systems and Control
- EE 5283  Engineering Optimization
- EE 5343  Intelligent Control and Robotics
- EGR 5023  Numerical Techniques in Engineering Analysis
- EGR 6013  Advanced Engineering Mathematics I
- EGR 6023  Advanced Engineering Mathematics II
- ES 5023  Environmental Statistics
- IS 5143  Information Technology
- IS 6433  Supervisory Control and Data Acquisition
- ME 5113  Advanced Systems Dynamics and Control
- ME 5143  Advanced Dynamics
- ME 5493  Fundamentals of Robotics
- ME 5513  Advanced Mechanism Design
- ME 5533  Advanced Machine Design
- ME 5553  Advanced Design of Cams and Gears
- ME 5713  Mechanical Behavior of Materials
ME 6573 Robotics Design and Analysis
ME 6953 Independent Study
MOT 5163 Management of Technology
MOT 5243 Essentials of Project & Program Management
MOT 5313 Emerging Technologies
MS 5003 Quantitative Methods for Business Analysis
MS 5023 Decision Analysis and Production Management
MS 5343 Logistics Systems Management
MS 5393 Topics in Production/Operations Management
MS 5453 Management and Control of Quality
STA 5093 Introduction to Statistical Inference
STA 5103 Applied Statistics
STA 5803 Process Control and Acceptance Sampling

**Mechanical Engineering**

*Thesis/Non-thesis Option*

**A. Required Mathematics Course (3 credit hours)**
EGR 6013 Advanced Engineering Mathematics I

**B. Required Technical Core Courses (6 credit hours)**

*Thermal and Fluid Systems*
ME 5243 Advanced Thermodynamics
ME 6613 Advanced Fluid Mechanics

*Robotics and Control*
ME 5493 Fundamentals of Robotics
ME 6123 Advanced Systems Dynamics and Control

*Mechanics and Materials*
ME 5713 Mechanical Behavior of Materials
ME 6413 Elasticity

**C. Designated Elective Courses approved by student's advisor**
(15 credit hours for thesis/21 credit hours for non-thesis)

**D. Degree candidates must complete one of the following course requirements:**
ME 6983 Master’s Thesis (thesis option)
ME 5973 Special Project (non-thesis option)

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**Table 2 Timeline of Progress**

<table>
<thead>
<tr>
<th>Progress</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Report to Cayla Jimenez</strong> at ME Office (&amp; international Office, if applicable)</td>
<td>Arriving at UTSA</td>
</tr>
<tr>
<td><strong>Report to Dr. Hung-da Wan</strong> (GAR: default advisor for your first semester for course work advising and approval)</td>
<td>First 2 weeks at UTSA</td>
</tr>
<tr>
<td><strong>Find your Research/Project Advisor</strong> and report your advisor’s name to Cayla</td>
<td>No later than completion of 9 credit hours</td>
</tr>
</tbody>
</table>
Consult with your Research/Project Advisor of course work and develop your MS Degree Program of Study Plan | After the first 9 credit hours; No later than completion of 18 credit hours
---|---
Form your Thesis/Special Project Committee (3-person faculty committee) | The semester before your graduating semester
1. Register for thesis (6 hours) or project (3 hours) and report to Cayla
2. Present Thesis/Project Proposal to your committee
3. Defend your thesis/project work to your faculty committee | Graduating semester
(Master’s Thesis: 30 hours) (Non-thesis: 33 hours)
Return program evaluation form to Cayla and check for final departure requirements | After Defense

**VI. Advisor**

Students in both thesis and non-thesis options, upon completion of the first 9 semester credit hours of their program, must select a Thesis/Special Project Advisor from the program’s contributing faculty members and obtain the faculty member’s consent to serve in this capacity. The entire program of study, as well as the selection of core and elective courses, must be recommended by the student’s Advisor within 18 credit hours of the student’s program. The courses taken by students are intended to focus and support the individual’s particular research area. The Advisor must be a tenured or tenure-track faculty member of the Mechanical Engineering Department or have an adjoint affiliation with the Mechanical Engineering Department.

**VII. Defense Committee**

The supervising defense committee members are selected by the student in consultation with their advisor and approved by the Graduate Advisor of Record and the Department Chair. This process should start as early as the time when the student has selected an Advisor. The supervising defense committee must be finalized by the semester before the graduating semester.

A supervising defense committee includes the advisor as the chair of the committee and a minimum of two additional members. Of the two additional members, at least one must be a Mechanical Engineering graduate faculty member. In order for a faculty member external to the department to serve on the committee, they must apply for Special Membership. The Program Coordinator can assist with this process.

**VIII. Final Defense**

During the semester the student intends to defend, students should register for **ME 6983 Master’s Thesis** or **ME 5973 Special Project**. The final defense is administered and evaluated by the student’s committee. The final defense consists of a public presentation of the thesis/special project, followed by a closed session with the members of the committee. Contingent on the approval of the committee for the student to pass the defense, the final version the Master’s Thesis must be uploaded to ProQuest.

**IX. Registration**

Students who attend classes at UTSA must be officially registered or approved to audit a course. UTSA does not guarantee the availability of particular courses or sections, and admission to classes is permitted only until the maximum number of students allowable in any section has been reached. UTSA reserves the right to cancel any course or section in which the number of registrants does not warrant its continuation.
If a student encounters a restriction when registering for a course, please contact the Program Coordinator in order to investigate the discrepancy. Students intending to register for **ME 6981-3: Master's Thesis** and **ME 5973: Special Project** must send an email to their faculty advisor requesting permission to be registered in the respective course. Once approval is received, please forward the email to the Program Coordinator and you will be notified when registration has been completed.

- **English Language Assessment Procedure:**
  - The English Language Assessment Procedure (ELAP) is a mandatory UTSA assessment for incoming international student’s whose Test of English as a Foreign Language (TOEFL) scores are between 60 and 65 (paper version) or 79 and 100 (Internet version). ELAP tests academic language skills in the areas of reading, writing, listening, and speaking. The test is administered during orientation week at no charge to the student. A registration hold is placed on students until the test is successfully completed.
  - Students who are required to take English for International Students (EIS) classes and do not register for them or drop them before they are successfully completed will be withdrawn from the University and will jeopardize their visa status. Once students successfully complete the EIS classes, the registration hold is removed from their record.

- **Auditing Courses:**
  - UTSA students and nonstudents who wish to audit a course may do so with the approval of the instructor and the chair of the department in which the course is offered, provided there is space in the classroom after all registered students have been accommodated. The minimum enrollment in a course must be reached without auditors.
  - All auditors must submit a signed Audit Course Form to the Enrollment Services Center, no sooner than the first day of class. A UTSA student pays an auditing fee of $25 per course. Auditors who are not registered UTSA students must pay an auditing fee of $50 per course. Persons over 65 years of age are permitted to audit without paying an auditing fee.

- **Cancellation of Enrollment:**
  - Students who fail to fulfill admission, registration, or financial requirements, or who otherwise fail to adhere to academic regulations may have their enrollment for the semester cancelled. Students may apply for readmission for a subsequent semester provided they have resolved the cause of cancellation.

- **Dropping Courses:**
  - Students may drop courses from their schedules for a limited time each semester. The online registration calendar for each semester indicates the deadlines for students to drop courses each term.
  - Courses officially dropped before the Census Date do not appear on a student’s transcript. See the online registration calendar each semester for Census Dates.
  - Students who drop courses between the Census Date and the Automatic “W” Date have a record of the courses on their transcripts with an automatic grade of “W.” See the online registration calendar for the Automatic “W” Date. The change becomes official after it is processed by the Office of the Registrar.
o The Automatic “W” Date for graduate students is the end of the ninth week of classes for Fall and Spring semesters, the end of the third week of classes for a five-week Summer term, and the end of the sixth week of classes for a ten-week Summer term.

o It is the student’s responsibility to drop a course by the appropriate deadline. If a student fails to drop a course, even if the student does not attend the course, he or she will receive a grade of “F” in the class.

o Faculty and staff will not drop a student from a course automatically for nonattendance; the student must initiate the process and complete any necessary steps to ensure that the class is dropped.

o Under certain circumstances, students may be dropped from courses administratively by college deans. Students who do not meet course prerequisites or who fail to attend a course prior to Census Date may be dropped from courses. If a dean determines that a student should be dropped from a course for these or other documented circumstances, the student will be notified by the college overseeing the course. Students cannot assume that they will be automatically dropped from any class for failure to attend or failure to pay tuition and fees. Students are still responsible for dropping courses by the official deadline or they will receive a grade of “F” in the class. Students are responsible for checking their schedules on ASAP and for checking their official UTSA e-mail accounts to determine if they have been dropped from a class.

o After the Automatic “W” Date, a student may not drop a course except with the approval of the Dean of the college in which the course is offered and then only for urgent and substantiated, nonacademic reasons.

X. Student Travel Support

Travel funding may be available by either a faculty member and/or the Department of Mechanical Engineering. The Department of Mechanical Engineering is committed to providing students with the opportunity to attend and participate in conferences, research opportunities, and training workshops, contingent on the availability of funds.

**IMPORTANT LINKS:**

ME Department: [http://engineering.utsa.edu/mechanical/](http://engineering.utsa.edu/mechanical/)

ME Faculty: [http://engineering.utsa.edu/mechanical/faculty-staff/](http://engineering.utsa.edu/mechanical/faculty-staff/)

Graduate School: [http://graduateschool.utsa.edu/](http://graduateschool.utsa.edu/)

Graduate Catalog: [http://catalog.utsa.edu/graduate/](http://catalog.utsa.edu/graduate/)

Attachments: Map from UTSA to SwRI

Map of SwRI
Main Gate at Culebra Rd

ME 6113 is taught in Building 77 (No. 18 on the map)