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

ACADEMIC POLICIES & PROCEDURES

Department of Mechanical Engineering

The University of Texas at San Antonio

Fall 2016
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:

- Earned a baccalaureate degree from a regionally accredited college or university in the United States or have proof of equivalent training at a foreign institution.
- A minimum grade point average of at least 3.0 (on a 4.0 scale) in the last 60 semester credit hours for graduate degree-seeking or the last 30 semester credit hours for special graduate and non-degree seeking.
- Completed at least 18 semester credit hours (12 of which must be at the upper-division level) or foreign institution equivalent coursework in the area or areas in which the graduate degree is sought or in related areas as determined by the Graduate Studies Committee for the proposed major.
- Be in good standing at the last institution attended.
- Unless otherwise specified, an official GRE or GMAT score must be submitted.
- An applicant from a country where the first language is not English, unless a bachelor's degree or higher was earned in an English speaking country, must have a minimum score of 550 on paper based Test of English as a Foreign Language (TOEFL), 79 on internet-based TOEFL, or 6.5 on the International English Language Testing System (IELTS).
- Meet additional admission criteria set forth by the graduate program of interest (see Graduate Program Requirements and Course Descriptions).
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 semester basis by the Department of Mechanical Engineering, The Center for Advanced Manufacturing and Lean Systems (CAMLSS), 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 Mathematics Course (3 credit hours)

- EGR 5023 Numerical Techniques in Engineering Analysis
- EGR 5213 Topics in Systems Modeling
- MAT 5603 Numerical Analysis
- MS 5003 Quantitative Methods for Business Analysis
- STA 5093 Introduction to Statistical Inference
- STA 5103 Applied Statistics
- EGR 6013 Advanced Engineering Mathematics I
- EGR 6023 Advanced Engineering Mathematics II

B. Required Topical Core Courses (9 credit hours)

- ME 5503 Lean Manufacturing and Lean Enterprises
- ME 5563 Computer Integrated Manufacturing
- ME 5583 Advanced Enterprise Process Engineering
- ME 5593 Advanced Topics in Manufacturing and Enterprise Engineering
- ME 5603 Advanced Manufacturing Systems Engineering
- ME 5703 Advanced Enterprise Systems Engineering

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

See Prescribed Elective table below

D. Degree candidates must complete the one of the following course requirements:

- ME 6983 Master’s Thesis (thesis option)
- ME 5973 Special Project (non-thesis option)

Prescribed 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 5343 Intelligent Control and Robotics
- EE 5413 Principles of Microfabrication
- EGR 5023 Numerical Techniques in Engineering Analysis
- EGR 5213 Topics in Systems Modeling
- EGR 5233 Advanced Quality Control
- 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 5503 Lean Manufacturing and Lean Enterprises
ME 5513 Advanced Mechanism Design
ME 5533 Advanced Machine Design
ME 5553 Advanced Design of Cam and Gears
ME 5563 Computer Integrated Manufacturing
ME 5573 Facilities Planning and Design
ME 5583 Advanced Enterprise Process Engineering
ME 5593 Advanced Topics in Manufacturing and Enterprise Engineering
ME 5603 Advanced Manufacturing Systems Engineering
ME 5703 Advanced Enterprise Systems Engineering
ME 5713 Mechanical Behavior of Materials
ME 6563 Flexible Automation and Manufacturing Systems
ME 6573 Robotics Design and Analysis
ME 6953 Independent Study
MOT 5163 Management of Technology
MOT 5233 Advanced Topics in Project 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 Core Courses (9 credit hours)**
   ME 5113 Advanced Systems Dynamics and Control
   ME 5243 Advanced Thermodynamics
   ME 5413 Elasticity
   ME 5613 Advanced Fluid Mechanics

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

D. **Degree candidates must complete the one of the following course requirements:**
   ME 6983 Master’s Thesis (thesis option)
   ME 5973 Special Project (non-thesis option)
Table 2 Timeline of Progress

<table>
<thead>
<tr>
<th>Progress</th>
<th>To be</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report to GAR for advising</td>
<td>First semester</td>
</tr>
<tr>
<td>Select Thesis/Non-thesis Advisor</td>
<td>Within 9 credit hours</td>
</tr>
<tr>
<td>Development of Program of Study</td>
<td>Within 18 credit hours</td>
</tr>
<tr>
<td>Form Defense Committee</td>
<td>At least one month before final thesis/special project defense</td>
</tr>
<tr>
<td>Pass Thesis/Special Project Defense</td>
<td>Time to be determined by the Student, Advisor and the Defense Committee</td>
</tr>
</tbody>
</table>

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 at least one month before the final defense.

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 500 and 600 (paper version) or 61 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.

- 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.
- 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.
- 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.
- 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.
- 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 financial support 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.

In order to submit a request for travel support, please visit the Mechanical Engineering website > ME Login > Online Request Tracking > Enter your UTSA email address > Type your login credentials > Select: Students > Complete the four (4) Required Forms at the bottom of the page. Once the four forms are completed, please print and submit to the Department of Mechanical Engineering. The Department of Mechanical Engineering will inform you of the funding amount you were approved for. After the conference, please submit ALL receipts you wish to be reimbursed for to the Department of Mechanical Engineering.
IMPORTANT LINKS:
ME Department: http://engineering.utsa.edu/me/
ME Faculty: http://engineering.utsa.edu/me/faculty_staff/faculty.html
Graduate School: http://graduateschool.utsa.edu/
Graduate Catalog: http://utsa.edu/gcat/

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)
Dr. Adel Alaeddini
Big Data Analytics in Healthcare and Manufacturing
Statistical Learning in Systems Modeling and Control

Dr. Kiran Bhaganagar
Wind Turbine Modelling
Turbulence
Drone Fluids Interface

Dr. Pranav Bhounsule
Mobile and Humanoid Robots
Mechanism Design
Mechatronics

Dr. Krystel Castillo
Mathematical Modeling of Complex Systems
Optimization
Big Data Analytics
Bioenergy Supply Chain Network Design

Dr. F. Frank Chen
Lean manufacturing
Flexible manufacturing
Supply chain management

Dr. Bing Dong
Energy Efficiency
Smart Building Systems
Building Controls & Diagnostics

Dr. Yusheng Feng
Computational bioengineering
Multi-scale simulation and control
Cancer treatment modeling

Dr. Zhi-Gang Feng
Multi-phase flow
Computational fluid dynamics
Heat and mass transfer

Dr. Ender Finol
Vascular biomechanics
Abdominal aortic aneurysms
Pulmonary hypertension
Non-destructive tissue mechanics

Dr. Wei Gao
Mech. behavior of materials, Low dim. materials
Biological and bio-inspired materials and structures
Computational material design
Adv. material manuf., characterization & testing

Dr. Hai-Chao Han
Cardiovascular biomechanics
Mechanical modeling & analysis
Tissue remodeling

Dr. Lyle Hood
Controlled Drug Delivery
Photothermal Therapies
Medical Device Design
Dr. Amir Karimi
Metastable thermodynamics
Phase change heat transfer
Thermal systems

Dr. Amir Jafari
Soft Robotics
Physical-Human-Robot Interaction pHRI
Exoskeletons and Prosthesis Devices

Dr. Ruijie Liu
Hydraulic Fracturing and Geomechanics
Micromechanics and Material Failure
HPC for Multi-field and Multi-physics

Dr. Victor Maldonado
Active Flow Control
Experimental Aerodynamics
Aircraft Dynamics and Control

Dr. Randall Manteufel
Energy Efficiency
Performance Assessment
Thermal Fluid Systems

Dr. Harry Millwater
Computational Mechanics
Probabilistic Life Prediction
Fatigue and Fracture

Dr. Brendy Rincon Troconis
Stress corrosion cracking, Hydrogen embrittlement
Coating adhesion, Passivation
Localized corrosion, Atmospheric corrosion,
Corrosion inhibitors

Dr. Can Saygin
Manufacturing engineering
Shop floor control and automation
Distributed decision-making

Dr. HungDa Wan
Six Sigma and Lean Systems
Manufacturing Systems Engineering
Digital Manufacturing and 3D Printing

Dr. Xiaodu Wang
Tissue Biomechanics
Age and Disease Related Fragility Fractures
Bioinspired Design/Synthesis of Nanocomposites

Dr. Justin Wilkerson
Theoretical and Computational Mechanics
Materials in Extreme Environments
Multifunctional Nanomaterials

Dr. Xiaowei Zeng
Computational Biomechanics
Multiscale Modeling & Simulation
Nanomechanics
# Mechanics/Materials Program of Study

## Master in Mechanics/Materials

<table>
<thead>
<tr>
<th>Math</th>
<th>Mechanics</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EGR 6013: Advanced Engineering Mathematics I</td>
<td>ME 5413: Elasticity</td>
</tr>
<tr>
<td></td>
<td>ME 5713: Mechanical Behavior of Materials</td>
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</tr>
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</table>

### Technical Core

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 5153</td>
<td>Numerical Methods in CE</td>
</tr>
<tr>
<td>CS 5233</td>
<td>Artificial intelligence</td>
</tr>
<tr>
<td>CS 5473</td>
<td>Data mining</td>
</tr>
<tr>
<td>EE 5103</td>
<td>Engineering programming</td>
</tr>
<tr>
<td>EGR 5023</td>
<td>Numerical tech. in Eng. Analysis</td>
</tr>
<tr>
<td>EGR 5703</td>
<td>Advanced scientific visualization</td>
</tr>
<tr>
<td>EGR 5713</td>
<td>High Performance Computing</td>
</tr>
<tr>
<td>ME 5413</td>
<td>ME 5483/CE 5023: Finite Element Methods</td>
</tr>
<tr>
<td>ME 5483</td>
<td>ME 5013: Topics in Corrosion</td>
</tr>
<tr>
<td>ME 5743</td>
<td>ME 5013: Topics in Fatigue &amp; Fracture</td>
</tr>
<tr>
<td>ME 5713</td>
<td>ME 5743: Composite Materials</td>
</tr>
<tr>
<td>ME 6663</td>
<td>ME 6813: Biomaterials</td>
</tr>
<tr>
<td>ME 6xxx</td>
<td>ME 6xxx Computational Materials</td>
</tr>
</tbody>
</table>

### Prescribed Computational Mechanics and Material Science Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>EGR 6023</td>
<td>Advanced engineering math II</td>
</tr>
<tr>
<td>EGR 6033</td>
<td>Linear and mixed integer optimization</td>
</tr>
<tr>
<td>MAT 5283</td>
<td>Linear algebra and matrix theory</td>
</tr>
<tr>
<td>MAT 5293</td>
<td>Numerical linear algebra</td>
</tr>
<tr>
<td>MAT 5673</td>
<td>Partial differential equations I</td>
</tr>
<tr>
<td>MAT 5683</td>
<td>Partial differential equations II</td>
</tr>
<tr>
<td>MAT 5833</td>
<td>Perturbation theory in applied mathematics</td>
</tr>
</tbody>
</table>

### Prescribed Mathematics Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BME 6823</td>
<td>Advanced biomechanics</td>
</tr>
<tr>
<td>BME 6863</td>
<td>Mechanical behavior of living tissues</td>
</tr>
<tr>
<td>CE 6153</td>
<td>Adv. mech. &amp; modeling of struct. mats</td>
</tr>
<tr>
<td>ME 5153</td>
<td>Structural Dynamics</td>
</tr>
<tr>
<td>ME 5453</td>
<td>Advanced Strength Materials</td>
</tr>
<tr>
<td>ME 5463</td>
<td>Fracture Mechanics</td>
</tr>
<tr>
<td>ME 5473</td>
<td>Viscoelasticity</td>
</tr>
<tr>
<td>ME 6833</td>
<td>Biomechanics</td>
</tr>
<tr>
<td>ME 6893</td>
<td>Topics in Biomechanics</td>
</tr>
<tr>
<td>ME 6xxx</td>
<td>Plasticity</td>
</tr>
</tbody>
</table>

### Prescribed Mechanics of Solids Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>CE 5713</td>
<td>Experimental stress analysis</td>
</tr>
<tr>
<td>MATE 5213</td>
<td>Sensing and sensor materials</td>
</tr>
<tr>
<td>MATE 5513</td>
<td>Fund. of microfabrication and applications</td>
</tr>
<tr>
<td>ME 5543</td>
<td>Probabilistic Engineering Design</td>
</tr>
<tr>
<td>ME 5883</td>
<td>Intro to micro and nanotechnology</td>
</tr>
<tr>
<td>ME 6113</td>
<td>Experimental Techniques</td>
</tr>
<tr>
<td>ME 6xxx</td>
<td>Design for Manufacturing</td>
</tr>
</tbody>
</table>
## Thermo-Fluids Program of Study

<table>
<thead>
<tr>
<th>Master in Thermo-Fluids</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Math</strong></td>
</tr>
<tr>
<td>EGR 6013: Advanced Engineering Mathematics I</td>
</tr>
<tr>
<td><strong>Technical Core</strong></td>
</tr>
<tr>
<td>ME 5243: Advanced Thermodynamics</td>
</tr>
<tr>
<td>ME 5613: Advanced Fluid Mechanics</td>
</tr>
<tr>
<td><strong>Suggested Technical Core (2 out of 3)</strong></td>
</tr>
<tr>
<td>ME 5653: CFD</td>
</tr>
<tr>
<td>ME 6113: Experimental Mechanics</td>
</tr>
<tr>
<td>ME 6613: Theoretical Fluid Dynamics-II (NEW)</td>
</tr>
<tr>
<td><strong>Prescribed Thermal Electives</strong></td>
</tr>
<tr>
<td>ME 5013: Special Topics</td>
</tr>
<tr>
<td>ME 5263: Combustion</td>
</tr>
<tr>
<td>ME 5303: Heat Transfer</td>
</tr>
<tr>
<td>ME 5343: Convection (Proposed to change to ME 6343)</td>
</tr>
<tr>
<td>ME 6333: Conduction</td>
</tr>
<tr>
<td>ME 6853: Advanced CFD &amp; Heat Transfer</td>
</tr>
<tr>
<td>ME 6973: Advanced Energy System (HVAC and building system) (New)</td>
</tr>
<tr>
<td><strong>Prescribed Fluid Electives</strong></td>
</tr>
<tr>
<td>BME 6873: Bio-fluids Mechanics</td>
</tr>
<tr>
<td>ME 5013: Special Topics</td>
</tr>
<tr>
<td>ME 5633: Gas Dynamics</td>
</tr>
<tr>
<td>ME 5753: Turbulence</td>
</tr>
<tr>
<td>ME 6973: Special Problems</td>
</tr>
<tr>
<td><strong>Prescribed Mathematics Electives</strong></td>
</tr>
<tr>
<td>EGR 6023: Advanced engineering math II</td>
</tr>
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<td>MAT 5833: Perturbation theory in applied mathematics</td>
</tr>
</tbody>
</table>
Advisor and Concentration Selection Form

Student Name: ________________________________  Banner ID: _________________

Degree Program (please check one):
- [ ] MS-Mechanical Engineering (ME)
- [ ] MS-Advanced Manufacturing & Enterprise Engineering (AMEE)
- [ ] PhD-Mechanical Engineering (ME)

Research Concentration (please check one):
- [ ] Thermal and Fluids Systems
- [ ] Controls and Robotics
- [ ] Mechanics and Materials
- [ ] Design and Manufacturing Systems (for PhD-ME and MS-AMEE programs only)

Term of Entry: ____________________________

Term of Advisor Selection: ____________________________

_______________________________________________________________________________________________________________

Print Name of Advisor  Signature of Advisor  Date

_______________________________________________________________________________________________________________

Signature of Student  Date

Revised: September 28, 2015