

# **MECHANICAL ENGINEERING GRADUATE PROGRAM HANDBOOK**

**FOR STUDENTS STARTED THEIR PROGRAM IN FALL 18 / SPRING19**

**UNIVERSITY OF SOUTH FLORIDA**

**COLLEGE OF ENGINEERING  
4202 E. FOWLER AVENUE, ENB 118  
TAMPA, FLORIDA 33620-5350**

**TEL: (813) 974-2280**

**FAX: (813)-974-3539**

**<http://me.eng.usf.edu>**

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## PREFACE

This booklet outlines the various departmental requirements and procedures that apply to all graduate students in the Mechanical Engineering Department and is subject to modification. **The contents of this booklet are supplementary to the rules and regulations of the Graduate School and the College of Engineering requirements and should be used only in that context.** Detailed information on Graduate School requirements and procedures can be found in the Graduate Catalog and in the Graduate School website ([www.grad.usf.edu](http://www.grad.usf.edu))

## ENTRANCE REQUIREMENTS

**MASTERS DEGREES:** As a rule, only students with a B.S. in Mechanical Engineering or a closely related field from an accredited engineering program will be considered for admission. All applicants must take the General Test of the Graduate Record Examination (GRE). The student must have a grade point average (GPA) of 3.0/4.0 for the last two years of course work from an ABET accredited engineering program and a minimum percentile rank of 50% on the quantitative portion and a minimum average percentile rank of 50% in verbal and quantitative must be obtained for admission to the Master's Program. Graduates of non-ABET accredited programs are evaluated on a case-by-case basis. For admission to the accelerated Master's degree program (BSME-MSME), Tc( )T0ccelerated Maste.15 Ti2retrnage admission. All aneering requiremPh.D. ed23ree p



A minimum of six credit hours of additional coursework is to be chosen from the three categories shown above and/or from any EML class offered by the department. Independent Study is not considered regular class and is not included in this group.

A maximum of six credit hours of Independent Study course offered by the Mechanical Engineering Department and/or 6000-level non-EML coursework may be credited towards a degree. Undergraduate courses will not be eligible for graduate credit.

In order to graduate, MSME degree with thesis option candidates must also successfully defend an original thesis.

A GPA of 3.0 or higher is required for graduation and no grade below a "C" can be applied towards the degree.

Students should be aware that only courses approved by their graduate advisor and Graduate Program Coordinator will count towards their degree. The student's faculty advisor and the Graduate Coordinator must approve the selection of courses. s a fsconotTj-1u.-.3 Tm

1. Satisfactorily complete (C or better) in departmental coursework on Mathematics and two other areas of specialization (1 major and 1 minor) as described below.
  - a) Mathematics:
    - a. Graduate courses - Advanced Mathematics, Advanced Mathematics II
  - b) Heat Transfer:
    - a. Undergraduate courses - Heat Transfer
    - b. Graduate courses - Conduction Heat Transfer, Convection Heat Transfer
  - c) Fluid Mechanics:
    - a. Undergraduate courses – Fluid Systems
    - b. Graduate courses - Advanced Fluids
  - d) Thermodynamics:
    - a. Undergraduate courses – Thermo I, Thermal Systems
    - b. Graduate courses - Advanced Thermodynamics
  - e) Dynamics:
    - a. Undergraduate courses – Dynamics, Vibrations, Kinematics and Dynamics of Machinery
    - b. Graduate courses - Advanced Dynamics of Machinery, Synthesis of Vibrating Systems
  - f) Solid Mechanics:
    - a. Undergraduate courses – Mechanics of Solids, Machine Design
    - b. Graduate Courses - Applied Elasticity
  - g) Materials:
    - a. Undergraduate courses – Materials I
    - b. Graduate courses - Advanced Materials
  - h) Controls:
    - a. Undergraduate courses – Controls
    - b. Graduate courses - Advanced Controls
2. Apply in writing to the Graduate Program Coordinator for permission to take the examination. The application must include a detailed statement of the courses taken, major and minor areas of specialization and must be submitted before October 15th.
3. Students may request an exemption from any required coursework if they have satisfactorily completed (B or better) equivalent coursework at an accredited institution other than USF.

No student will be allowed to take the examination if the cumulative GPA of all courses taken at USF is below 3.0, have not chosen a major professor and formed a supervisory committee, or is holding conditional or provisional admission status in the program. The examination will be administered by a Departmental Qualifying Examination Committee once a year (typically during February), as needed.

1. Written Examination

- a. Examinations will be given on Mathematics, and student's chosen major and minor areas of specialization. Examinations will be prepared by the qualifying examination committee and will be administered by the Graduate Program Coordinator. Composition of the committee will be rotated among all faculty members and determined by the exam areas to be offered. If at all possible, a Ph.D. advisor will not be involved in the evaluation of her/his students. The length of each examination will be approximately three hours of duration.
- b. The type of written examination, i.e., open book etc., is at the discretion of the assessor.

2. Passing and Advancement to Candidacy

- a. A student is required to pass the written examination in all 3 areas (Mathematics, major area of specialization, minor area of specialization) for advancement to candidacy.
- b. In case a student passes in 2 areas and fails in 1 area, a make-up written or oral examination may be requested by the student. The make-up examination will be given during the last two weeks of March.
- c. In case a student fails the written examination in more than one area or fails the written or oral make-up examination, he or she will need to re-take the entire qualifying examination in the following year.
- d. Students will be given a maximum of two attempts to pass the qualifying doctoral program.

eMAJOR PROFESSOR AND SUPERVISORY COMMITTEE

## UNDERGRADUATE COURSE PREREQUISITES

Students entering the Masters and Ph.D. Degree programs must have completed the following courses in their undergraduate Mechanical Engineering curriculum:

a) **Mathematics**: Calculus I, II, III and Differential Equations.

b) **Mechanical Engineering**: Thermodynamics, Heat Transfer, Fluid Mechanics, Machine Design, and Solid Mechanics.

Students entering from disciplines other than Mechanical Engineering will be required to make up any deficiencies before starting their graduate work.

## NON-DEGREE SEEKING STUDENTS

Students who are qualified to enroll in specific graduate courses, but who do not intend to work toward a graduate degree may enroll as non-degree seeking students. Non-degree students may enter classes on a space available basis during the first week of each semester by obtaining consent of the course instructor and Graduate Program Coordinator. Students must meet pre-requisites of courses in which they wish to enroll.

**NO MORE THAN FIFTEEN HOURS OF CREDIT EARNED AS A NON-DEGREE STUDENT MAY BE APPLIED TO SATISFY GRADUATE DEGREE REQUIREMENTS.**

Any application of such credit must be approved by the degree granting college, students must earn a grade of B or better and the course must be suitable to the program. This track for entering graduate study has been found especially helpful to students in industry who seek special training in specified areas of graduate instruction, but are uncertain as to pursuing a degree. Students who miss the deadline for admission to the Graduate Program may also take courses as a non-degree seeking student while their admission to the Graduate Program is being evaluated.

## COMPLETION OF THE PROGRAM

All degree seeking graduate students, excluding students admitted to candidacy, must be enrolled in at least one term (Fall, Spring, Summer) during the previous 12 months. Students who have not enrolled in any of the last three terms will be dropped from their degree program and changed to inactive. Students may reapply to the University by submitting a new application. Applicants will be subject to the admission criteria in effect at that time. Students may request exceptions to this policy, for legitimate and valid reasons, through their Department, College, and the Graduate School.

**It is the student's responsibility to apply for graduation through the Mechanical Engineering Department by the posted College of Engineering deadline. Students must also submit a defense announcement to the department at least 2 weeks prior to the scheduled defense date.** Graduate students must be registered for a minimum of two hours the semester they graduate.





## MECHANICAL ENGINEERING FACULTY AND AREAS OF SPECIALIZATION

**Rajiv Dubey** (Professor/Chair) Ph.D.; Clemson University, 1986; Rehabilitation Robotics; Prosthetics and Orthotics; Dynamic Systems and Controls; [dubey@usf.edu](mailto:dubey@usf.edu)

**Jonathan Gaines** (Instructor) Ph.D.; Virginia Tech, 2011; Human-Robot Collaborative Systems, Co-Robotics Technology for Non-Traditional Populations, STEM Education, Sensor Perception; [gainesj@usf.edu](mailto:gainesj@usf.edu).

**Nathan Gallant** (Associate Professor) Ph.D.; Georgia Institute of Technology, 2004; Biomaterials and Tissue Engineering; [ngallant@usf.edu](mailto:ngallant@usf.edu)

**Miguel Goni Rodrigo** (Instructor) Ph.D.; Boston University, 2018; Nanoscale Heat Transfer and Solid Mechanics; [mgonirodrigo@usf.edu](mailto:mgonirodrigo@usf.edu)

**Rasim Guldiken** (Associate Professor/Graduate Program Coordinator) Ph.D.; Georgia Institute of Technology, 2008; Microfluidics and Acoustics; [guldiken@usf.edu](mailto:guldiken@usf.edu)

**Daniel P. Hess** (Professor) Ph.D.; State University of New York at Buffalo, 1991; Vibrations, Friction, Fasteners; [hess@usf.edu](mailto:hess@usf.edu)

**Autar K. Kaw** (Professor) Ph.D.; Clemson University, 1987; Engineering Education Research, Mechanics; [kaw@usf.edu](mailto:kaw@usf.edu)

**Ashok Kumar** (Professor) Ph. D.; North Carolina State University, Raleigh 1992; Nanomaterials, Microelectronics, Thin Film Technology; [kumar@usf.edu](mailto:kumar@usf.edu)

**Craig Lusk** (Associate Professor) Ph.D.; Brigham Young University 2005; Compliant Mechanisms and Biomechanics; [clusk2@usf.edu](mailto:clusk2@usf.edu)

**Ajit Mujumdar** (Instructor/ Undergraduate Advisor) Ph.D.; New Jersey Institute of Technology, 2003; Powder Technology, Discrete Element Simulations; [ajit@usf.edu](mailto:ajit@usf.edu)

**David Murphy** (Assistant Professor) Ph.D.; Georgia Institute of Technology, 2012; Biofluid Mechanics; [davidmurphy@usf.edu](mailto:davidmurphy@usf.edu)

**Jose L.F. Porteiro** (Professor) Ph.D.; Rutgers University 1980; Fluid Mechanics, Heat Transfer; [porteiro@usf.edu](mailto:porteiro@usf.edu)

**Frank Pyrtle, III** (Instructor) Ph.D.; Georgia Institute of Technology 2005; Thermal Management, Heat Transfer; [pyrtle@usf.edu](mailto:pyrtle@usf.edu)

**Kyle Reed** (Associate Professor) Ph.D.; Northwestern, 2007; Rehabilitation Engineering and Haptics; [kylereed@usf.edu](mailto:kylereed@usf.edu)

**Oscar Rios** (Instructor) Ph.D.; University of California, San Diego, 2017; Dynamics, Robotics, and Ocean Wave Energy; [rios@usf.edu](mailto:rios@usf.edu)

**Alex A. Volinsky** (Associate Professor) Ph.D.; University of Minnesota 2000; Thin Films Processing, Mechanical Properties and Characterization; [volinsky@usf.edu](mailto:volinsky@usf.edu)

**Stuart Wilkinson** (Associate Professor) Ph. D.; University of Southampton, 1984; Energy Systems Design, Bionomic Engineering; [wilkinso@usf.edu](mailto:wilkinso@usf.edu)

**Gulfem Ipek Yucelen** (Instructor) Ph.D.; Georgia Institute of Technology, 2012; Nanoscale Materials; [giy@usf.edu](mailto:giy@usf.edu)

**Tansel Yucelen** (Assistant Professor) Ph.D.; Georgia Institute of Technology, 2012; Systems and Control; [yucelen@usf.edu](mailto:yucelen@usf.edu)

**Mike Cai Wang** (Assistant Professor) Ph.D.; University of Illinois at Urbana-Champaign, 2018; Nano-Science/Nano-Manufacturing, Interfacial/Surface Phenomena;

## **IMPORTANT CONTACTS FOR GRADUATE STUDENTS**

### GRADUATE ADMISSIONS

SVC 1036  
(813) 974-8800

### GRADUATE STUDIES

ALN 226  
(813) 974-2846

### USF TAMPA BOOKSTORE

BKS 0269  
(813) 974-2631

### INTERNATIONAL SERVICES

CGS 104  
(813) 974-5102

### OFFICE OF FINANCIAL AID

SVC 1102  
(813) 974-4700

### ENGINEERING DEAN'S OFFICE

ENB 105  
(813) 974-3780

## **DEPARTMENT OF MECHANICAL ENGINEERING CONTACTS**

Dr. Rasim Guldiken  
Graduate Program Coordinator  
Department of Mechanical Engineering  
University of South Florida  
4202 E. Fowler Ave. ENB 118  
Tampa, FL 33620-5350  
(813) 974-5628  
[guldiken@usf.edu](mailto:guldiken@usf.edu)

Dr. Rajiv Dubey  
Department Chair  
Department of Mechanical Engineering  
University of South Florida  
4202 E. Fowler Ave. ENB 118  
Tampa, FL 33620-5350  
(813) 974-5619  
[dubey@usf.edu](mailto:dubey@usf.edu)