

Graduate Student Handbook

Master's Program in Mechanical Engineering

DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING

The University of Texas at Arlington

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WELCOME!

The faculty, staff and students in the Mechanical Engineering Program would like to welcome you to the Master's program in Mechanical Engineering. This handbook is designed to help you get acquainted with the workings of our program. The information in this handbook will let you know what needs to be done, when it needs to be done, where you need to go to get information, and who can help you with problems that may occur. This handbook, the UTA Student Handbook, the Graduate Catalog (www.uta.edu/gradcatalog/mechanical_engineering), and the MAE Department website (www-mae.uta.edu) will serve as sources of information for you as you progress through our program.

NAMES YOU SHOULD KNOW

Graduate Advisor

Dr. Seiichi Nomura
304D Woolf Hall
817-272-2012
nomura@uta.edu

Dr. Ratan Kumar
306A Woolf Hall
817-272-0740
ratan.kumar@uta.edu

Most of the decisions you make concerning your academic program will be made with the assistance of the graduate advisor. This includes curriculum, registration, adding and dropping courses, and completing the necessary paperwork as you pursue your degree. The graduate advisor is your first point of contact for all of these matters.

Associate Chair for Mechanical Engineering

Dr. Don Wilson
202 Woolf Hall
817-272-2561
wilson@uta.edu

The Associate Chair is responsible for all decisions concerning the operations of the program, including the funding of all teaching and research assistantships as well as scholarships.

Chair, Committee on Graduate Studies

Dr. Cheng Luo
215 Woolf Hall
817-272-5715
chengluo@uta.edu

Many decisions concerning the requirements of the graduate program are made by the ME Committee on Graduate Studies. This committee also handles student petitions and reviews the progress of all students in the program periodically.

Program Senior Office Assistant

Ms. Wendy Ryan
204 Woolf Hall
817-272-2500
wendy.ryan@uta.edu

GETTING STARTED IN THE PROGRAM

Department Check-in

Upon arrival at the university, please come to the departmental office in Room 204 Woolf Hall. A ME staff assistant will assist you in getting started at UT Arlington.

Orientation for International Students

All international students must attend a university orientation for foreign students, most often given a week or two before school starts. You will receive a letter directly from the International Office regarding this orientation. This orientation is required before you can be advised and register for classes.

Students Requiring GESP

Those students who were admitted to the ME Program with an English deficiency must go to the GESP Office and be tested prior to meeting with the ME Graduate Advisor. The ME Graduate Advisor will not advise such students until the GESP Office has provided the ME Graduate Advisor with the results of the GESP tests.

Meeting with the ME Graduate Advisor

When you check in with the ME staff assistant, you will be provided information for meeting with the ME Graduate Advisor for the purpose of being advised for course selection for your first semester. Prior to meeting with the ME Graduate Advisor, please review this handbook, the semester ME course offerings, the ME section of the Graduate Catalog, and the MAE Department website, and have a plan for which courses you wish to take. (The current semester's schedule of classes gives the exact days and times for registration and should be consulted each semester, not only for registration information, but for advising instructions, as well. The spring schedule is available in mid-October; the summer/fall schedule is available in mid-March.) Subsequently, you will meet with the ME Graduate Advisor, who will approve your plan and clear you to register. Once a student has passed 9 hours of coursework and achieved at least a 3.0 GPA, the student will not have to meet with the ME Graduate Advisor for the purpose of being advised for courses and clearance for registering.

Registering and Obtaining UTA Identification (ID) Card

Once you have met with the ME Graduate Advisor, you may register for courses on the UT Arlington website, www.uta.edu/mymav. In order to attend any given semester, a student must register and pay fees. As a part of enrolling in the university, you will be required to obtain a MAV EXPRESS card from the Mav Express Office, Main Level of the University Center. This

card will allow you access to various campus events, the library, and the health center, as well as being a source of identification to verify that you are a UT Arlington student.

Graduate Teaching and Research Assistants

U.S. Students

U.S. students must attend an orientation session for all new employees. You will need to bring your social security card and your Texas driver's license or some other I.D. This session is mandatory, and you will not get paid unless you attend. The session takes about one and one half hours to complete.

International Students

You will first need to go to the International Office with your visa to obtain an Identity and Employment Authorization letter. This letter certifies that you have a visa and that you are allowed to work in the U.S. You must take this letter to the Office of Human Resources (J.D. Wetsel Service Bldg. (corner of Mitchell & Davis Streets) along with your passport and social security card (if you have one) to set up an orientation session given to all new employees. This session is mandatory, and you will not get paid unless you attend. This session takes about one hour. If you do not have a social security card, you must return to personnel after you receive your card and show it to them. All students that will be paid in any way must have a social security number. Most international students will have to apply for a card and this should be done as soon as possible. Applications must be delivered in person to the Tarrant County Court House in Fort Worth (819 Taylor Street) or to the Arlington office of the Social Security Administration. At the international student orientation session held by the International Office, you can fill out an application for a social security number and that office may arrange to take students to Fort Worth to submit the form. If you are unable to go at that time, you can go any time on your own. It takes about two weeks to get your card, but you can call, after several days, and receive your number only; you cannot be paid until you get your social security number.

English Proficiency. Before being appointed to an assistantship at UT Arlington, a student whose native language is not English must demonstrate English proficiency. The preferred method to demonstrate proficiency is by submitting an acceptable score of 45 or higher on the Test of Spoken English (TSE) or by earning a score of 23 on the Speaking Section of the TOEFL iBT, or by earning a score of 7 on the Speaking Section of the IELTS. Holding a degree(s) from a U.S. college or university does not exempt from this requirement assistantship applicants who are non-native speakers of English. A student may also demonstrate English proficiency by submitting an acceptable score of 45 or higher on the UT Arlington Spoken English Assessment (SEA) test. Contact the UT Arlington Assessment Services Office for SEA information.

Developmental English Program. Students who do not achieve scores on the TSE, TOEFL iBT, IELTS or SEA high enough to satisfy the English proficiency requirements for graduate teaching assistants must enroll in the Developmental English Program and be certified for English proficiency before becoming eligible to hold a teaching assistantship. This 10-week program, offered by the UT Arlington English Language Institute, emphasizes oral presentation skills and accent reduction. Registration is in 402 Hammond Hall, and the charge for course is payable at the time of registration. Contact the English Language Institute at 817-272-2730 for details, including the current class schedule and charges.

UNIVERSITY FACILITIES

A campus map can be found on the university website www.uta.edu/maps. Some of the more important facilities are listed below.

Office of Research and Graduate Studies (Graduate School)

The Graduate School is located in Davis Hall Room 333. The staff in that office can answer questions and supply the forms that you will need while you are enrolled here.

Libraries

The University has three libraries: the Central Library, the Science and Technology Library, and the Architecture and Fine Arts Library. A full description of the library system is given in the graduate catalog.

Computer Labs

The MAE Computer Lab is located in Rooms 318, 320 and 322 in Woolf Hall. All MAE students who are enrolled in any MAE course are automatically given an access to the lab computers. For details, please visit the lab and talk to a user assistant on duty.

Keys

A Key Request Form should be obtained from an administrative assistant in Room 204 Woolf Hall. The form should be signed by your supervising faculty member, as well as by the MAE Department Chairman. After all signatures are obtained, the form will be forwarded to the Key Control Office.

Mailboxes

ME graduate student (with GTA appointments) mailboxes are located in Room 214C Woolf Hall. Please check your mailbox daily since you will be notified of important happenings by notice in your mailbox.

Health Center

A health center is available to meet your medical needs. A full description of the services offered by the health center can be found on the university website www.uta.edu/health_services.

E.H. Hereford University Center

The E.H. Hereford University Center has numerous facilities and offices of interest to all students. In it are 13 private dining-meeting rooms, lounges, two ballrooms, four food service areas, bowling and billiards, a post office, general store, bank, gallery, and video room. The center is also home to 160 campus student organizations, the Student Congress, and the Student Activities Board. The Housing Office and the International Office are also located in the Center.

Maverick Activities Center

Students will find the Maverick Activities Center (MAC) offers many recreational facilities and activities. The 190,000 square foot facility is described on website www.uta.edu/campusrec/. A Mav ID card is required for entry. MAC facilities include: internet café with juice bar (wired and wireless connection), 20,000 square foot weight and fitness room, multipurpose rooms — yoga, martial arts, aerobics, etc., five indoor basketball courts, eight volleyball courts, indoor soccer gymnasium, two indoor tracks, six racquetball courts, ten badminton courts, game room and table tennis, climbing wall, two outdoor volleyball courts, two outdoor basketball courts, and men's and women's health club style locker rooms.

REQUIREMENTS OF THE MASTER'S PROGRAM

As in any Master's program, you will be required to accomplish a number of tasks before being awarded your degree. In this section the entire process will be outlined in detail. Please read this carefully and refer to it often. The ME faculty expect Master's students to complete the various portions of the program in a timely manner. Additionally, the Graduate School has firm deadlines each semester that all graduate students must comply with. Do not expect exceptions for deadlines, such as scheduling the final master's exam, thesis defense, filing for graduation, and filing the final thesis.

The First Year

During the first visit with the ME Graduate Advisor, you will discuss the planned courses that you will take your first semester. Unless you have academic deficiencies, you will normally take all ME courses in the first semester. This year and the following year a full time student will enroll in at least 9 hours of course work/research per semester. The details of the course offerings are listed in the Graduate Catalog, and the requirements that pertain to you are those listed in the catalog current at the time you enter the graduate program. The Graduate School requires that you maintain a 3.0 GPA (on a 4 point scale) in all course work taken as a graduate student.

If you have elected to pursue a thesis degree, you need to have a ME faculty member agree to supervise your research. During the first semester you are encouraged to talk to a large number of department faculty members regarding working under their supervision for Master's research. (A listing of ME faculty is provided in *Appendix A*.) It is expected that by the end of your first semester you will find a faculty advisor who will agree to work with you. Students who fail to obtain a research advisor during their first year of full time study need to finish their Master's via non-thesis option.

DEGREE REQUIREMENTS

Core Courses

Thermal Science: ME 5316 Thermal Conduction, ME 5317 Convection Heat Transfer, ME 5318 Radiative Heat Transfer, ME 5321 Advanced Classical Thermodynamics

Fluid Science: ME 5313 Fluid Dynamics, ME 5342 Advanced Gas Dynamics I, ME 5344 Viscous Flows

Design, Mechanics and Manufacturing: ME 5310 Finite Element Methods, ME5311 Structural Dynamics, ME 5337 Introduction to Robotics, ME 5339 Structural Aspects of Design

Controls and Systems: ME 5303 Classical Methods of Control Systems Analysis and Synthesis, ME 5305 Dynamic Systems Modeling, ME 5341 Control Systems Components.

Analysis Courses

ME 5331, ME 5332, or approved mathematics courses.

Master of Science in Mechanical Engineering (Thesis Degree)

The Master of Science degree is a research-oriented program in which completion of a thesis is mandatory. A minimum of 30 credit hours is required as follows: three core courses (one course each in three of the four areas) and two analysis courses listed above; three graduate courses (nine credit hours) related to a specialty in mechanical engineering; and six credit hours of thesis. The student must enroll in ME 5398 or ME 6397 every semester in which the student is actively involved in thesis preparation or research, except that the student must enroll in ME 5698 in the semester of graduation.

Master of Engineering in Mechanical Engineering (Non-Thesis Degree)

The Master of Engineering degree is an engineering practice-oriented program. A minimum of 30 credit hours is required as follows: three core courses (one in each area) and two analysis courses listed above; five courses (15 credit hours) of elective graduate courses in engineering, mathematics, and/or science relating to the student's interest areas.

Certificate in Electronic Packaging

The Certificate in Electronic Packaging program provides graduate-level knowledge in the field of electronic packaging. Technical material covered in the classroom will be complemented by a number of seminars by industry leaders in the packaging field. There are two enrollment options: as a student pursuing a MS degree or as a non-degree-seeking special student. The special student avenue is tailored for individuals currently employed in an electronics-related industry. Students will receive the certificate after completing 12 credit hours of packaging courses. You can find more details about the program at: http://www.uta.edu/engineering/specials/elec_pkging.php

Research (for Master of Science Degree)

Research for the Master's degree must begin by the end of the first year of course work (or earlier). It will continue until your advisor and advisory committee determine that you are ready to defend your work.

Master's Thesis (for Master of Science Degree)

The final copies of the Master's thesis must be prepared according to the regulations of the Graduate School. Please use *UTA Thesis and Dissertation Guide: Requirements, Style and RAFT Template*, found on website: <https://orgs.uta.edu/CurrentStudents/raft.asp>.

Final Master's Exam

The final requirement for the Master's degree is the final program exam. The final program exam can result in:

1. Pass with a recommendation to the Dean of the Graduate School that the candidate be certified to receive the earned degree.
2. A conditional pass with the requirement that additional conditions be met which may include further work on the thesis or the thesis substitute, additional course work with a minimum GPA specified, and within a specified time period.
3. Failure and recommendation to the Dean of the Graduate School the candidate be dismissed from the program.

The ME program limits the number of repeats of the final master's exam to two times. Additional repeats require the written permission of the Dean of the Graduate School. If the student chooses the exam date past the deadline, the student will be considered to graduate in the following semester.

For students in the non-thesis degree plan (Master of Engineering degree), the final exam can be written, oral, or both. The exam will be administered by all members of the student's supervising committee.

Graduating Semester

Just prior to your graduating semester, download the Degree Plan Worksheet from the Graduate School website: (<http://grad.uta.edu/CurrentStudents/VirtualGraduateSchoolAdvisor.asp>). A copy of this form is given in *Appendix B*. This form will be used to form your Supervising Master's Committee and identify your coursework that is being applied to the degree. If you are pursuing a thesis-based MS degree, form your thesis committee with the assistance of your research advisor. If you are pursuing a non-thesis-based M. Engr. degree, ask a ME faculty member to be chair of your Supervising Master's Committee. Once that faculty member agrees to serve, you will form the rest of your committee. Remember that you must ask faculty to serve on your committee and they have to agree to serve. Once your committee has been formed and they have signed approval of your coursework, the Degree Plan Worksheet form is submitted to the Graduate Advisor for final approval processing. Requirements for being a Supervising Master's Committee member are detailed below.

Supervisng Master's Committee. The Supervisng Master's Committee must be composed of at least three members. The chair of the committee must be a member of the Mechanical Engineering Committee on Graduate Studies (MECOGS) and a majority of the committee members must be members of MECOGS. MECOGS is composed of those full-time faculty members of the Mechanical and Aerospace Engineering Department who participate substantially in the mechanical engineering program and have been approved for MECOGS membership. Other individuals who can serve on the Supervising Master's Committee include full-time UT Arlington faculty in programs and departments other than ME and individuals who have been approved by MECOGS as Special Members or Special Associate Members of MECOGS.

A student must be enrolled in graduate school the semester in which the student completes all graduate degree requirements and applies for graduation. In the graduating semester there are

several important deadlines that you must meet and fees that are to be paid. You should check the Graduate School's website given above for these deadlines and fees and all forms that must be filed this last semester. Graduation checklists (for thesis and non-thesis degrees) are provided at this website (*Appendix C*). The first important deadline is filing for graduation. The form for this purpose is shown in *Appendix D*. The next significant date is that of the final master's exam (which applies to both thesis and non-thesis degrees). The final date to hold this exam is late November (in the fall semester) and mid-April (in the spring semester). The student must prepare a Request for Scheduling of the Final Master's Examination form (*Appendix E*). The form must be submitted to the Graduate School no later than two weeks before the proposed exam date. Subsequent to the exam, the Final Master's Examination Report form (*Appendix F*) must be filed with the Graduate School.

Academic Probation

If your GPA falls below 3.0 at any time, you are automatically put on academic probation by the Graduate School. You are given one long semester (fall or spring) to raise your GPA to a 3.0. The ME Graduate Advisor and the Chair, ME Committee on Graduate Studies, shall meet at the end of each semester to review the progress of all graduate students on academic probation. Under very special circumstances the Committee on Graduate Studies may approve a student's petition to the Graduate School to continue on academic probation for another long semester. The petition must ultimately be approved by the Graduate School. However, do not depend on this to keep you in school. Keeping your GPA at 3.0 or better is extremely important and a major responsibility on your part. Keep your research advisor and Graduate Advisor informed, as your advisors may be able to assist you when you are having difficulties in your courses.

APPENDICES

- A. Request for Scheduling Final Master's Examination
- B. Final Master's Examination Report

APPENDIX A

Request for Scheduling Final Master's Examination

**THE GRADUATE SCHOOL
THE UNIVERSITY OF TEXAS AT ARLINGTON
REQUEST FOR SCHEDULING OF THE FINAL MASTER'S EXAMINATION**

This request must be received by the Dean of the Graduate School prior to the examination date requested. Students and advisors should consult the current Graduate Catalog for deadline dates applicable to the scheduling and administration of the Final Master's Examination.

This is to request that a(n)

- Oral
 - Thesis
 - Thesis Substitute/Non-thesis
- Written (Thesis Substitute/Non-thesis)
- Written and Oral (Thesis Substitute/Non-thesis)

examination for _____, _1000_____
(name) (UT Arlington ID)

a candidate for the master's degree in _____ be scheduled for
(program)

_____ at _____ in _____
(month) (day) (year) (time) (building) (room)

Name (typed)

Signature

Date (mm/dd/yy)

Committee Chairman

Committee Member

Committee Member

Committee Member

Graduate Advisor

The original must be submitted to the Dean of the Graduate School.

You may be entitled to know what information The University of Texas at Arlington (UT Arlington) collects concerning you. You may review and have UT Arlington correct this information according to procedures set forth in UTS 139. The law is found in sections 552.021, 552.023 and 559.004 of the Texas Government Code.

APPENDIX B

Final Master's Examination Report

**THE GRADUATE SCHOOL
THE UNIVERSITY OF TEXAS AT ARLINGTON
FINAL MASTER'S EXAMINATION REPORT**

The original report must be submitted to the Dean of the Graduate School within two working days after the examination is administered. All reports must be received in the Graduate School no later than three weeks prior to the date on which the degree is scheduled to be conferred. Students and advisors should consult the current Graduate Catalog for deadline dates applicable to the administration and report of the Final Masters Examination.

Candidate : _____ Date of Examination: _____
(Last Name) (First Name) (mm/dd/yy)

UT-Arlington ID Number _____

Program : _____

Degree: _____

This is to report that the above-named candidate sat for the Final Master's Examination with the following result:

- Passed unconditionally
- Passed conditionally, with the specified remedial _____

(Upon completion of the required remedial work, the Committee must notify the Dean of the Graduate School in writing that all the conditions imposed have been satisfied.)

- Failed, with permission to be reexamined after specified period: _____
- Failed, dismissal from the program.

The examination was:

- Oral
 - Thesis
 - Thesis Substitute/Non-Thesis
- Written (Thesis Substitute/Non-Thesis)
- Written and Oral (Thesis Substitute/Non-Thesis)

Name (typed) Signature Date(mm/dd/yy)

Committee Chairman

Committee Member

Committee Member

Committee Member

Graduate Advisor

You may be entitled to know what information UT Arlington (UTA) collects concerning you. You may review and have UTA correct this information according to procedures set forth in UTA System BPM #32. The law is found in sections 552.02, 552.023 and 559.004 of the Texas Government Code.