

# **Mechanical Engineering Master of Science Program**

at Louisiana Tech University

ME Program Chair: Dr. David Hall

ME Graduate Coordinator: Dr. Chad O'Neal

**Admission to the Program:** The best preparation for graduate study in the M.S. program in Mechanical Engineering is a baccalaureate degree in mechanical engineering from an ABET accredited program. Students who do not possess this background are not discouraged from applying, but in general, must expect some non-graduate credit background work in order to pursue their graduate program effectively and successfully. All students must submit a Graduate Records Examination (GRE) score before being considered for admission to Graduate School. In addition to the general University admission requirements, applicants must have a score on the GRE (verbal plus quantitative) of at least 1070 or higher and an undergraduate GPA of 3.0 or higher to be considered for unconditional admission to the M.S. program in Mechanical Engineering. Students not meeting these requirements may be considered for conditional admission to the M.S. program.

**Financial Assistance:** The program has a very limited number of graduate assistantships (funded by the College) available for Masters students. Research assistantships (funded by external research contracts) may also be available from mechanical engineering faculty who have ongoing research projects. Out of state tuition is waived for both types of assistantship. Graduate assistantships are provided from College of Engineering & Science funds and usually provide \$9,000 for a full time assistantship (part-time assistantships may be awarded at lower rates of pay). A full time assistantship requires that a student work 20 hrs/week in fulfilling the duties assigned for the assistantship. Stipends from research assistantships vary and are negotiated directly with the mechanical engineering faculty member who is the principal investigator on the research contract providing the assistantship funds.

**Assignment of Advisors:** Upon admission to the Graduate School, the graduate student is assigned to the Mechanical Engineering Program. The graduate coordinator for the program is assigned as the student's temporary advisor until a permanent one is selected. In the fall of each year, the graduate coordinator provides the new graduate students with an orientation to the program. During the first quarter in the Graduate Program, the new graduate student should meet with all of the Mechanical Engineering faculty members to discuss matters that relate to research projects, study plans, and resources. It is the student's responsibility to contact and select a Committee chairperson and Committee members who agree to accept this role. The Chairman of the Advisory Committee will serve as the student's permanent faculty advisor. In general, the Advisory committee must be graduate faculty in the College of Engineering & Science, and at least two members must be in the Mechanical Engineering program. The committee chairman must be a graduate faculty member in the Mechanical Engineering Program. This selection process should be completed before pre-registration for the next quarter of study (usually the sixth week of the quarter). The permanent faculty advisor will assist the new graduate student to determine courses of study and to advise the student regarding research opportunities and faculty interests, plan of study, and advisory committee requirements. The student and the faculty advisor should develop a preliminary course of study by the end of the first quarter. This plan of study must be submitted before the end of the first quarter or the student will not be allowed to register for the next quarter of study. After the Advisory Committee is appointed and a Plan of Study has been filed with the

Graduate School, the student may appeal for a change of advisor only under extreme circumstances. Procedures for changing thesis advisors are described in the current University Bulletin.

**M.S. Degree Requirements:** For the M.S. program in Mechanical Engineering (thesis option), a student must complete a minimum of 30 semester hours of approved graduate courses, including 6 semester hours of research and thesis. A minimum of 15 hours (excluding research and thesis hours) must be in courses open only to graduate students. For the non-thesis option, a student must complete a minimum of 36 semester hours of approved graduate courses, including 3 semester hours of practicum or additional courses. A minimum of 18 of these hours must be earned in courses open only to graduate students. The student must indicate his/her preference for the non-thesis option during the first quarter of graduate enrollment when his/her Plan of Study is submitted. An average GPA of 3.0 must be maintained.

**Course of Study:** The program of study for the M.S. in Mechanical Engineering is relatively flexible. Only the "core" courses are required of all students, and the remaining course work required to meet the minimum requirements may be selected by the student in consultation with and with the approval of the student's Graduate Advisory Committee. The "core" courses include:

#### **Mechanical Engineering Faculty & Research Interests**

Faculty Member	Office	Research Interests
Dr. Henry Cardenas	BH 238	Materials durability, ceramic nanocomposites, electrokinetics, concrete
Dr. Melvin Corley	BH 249	advanced computing and applied numerical methods, fire protection, automatic controls
Dr. Kelly Crittenden	BH 213	Biomechanics, biomedical applications
Dr. David Hall	BH 255	trenchless technology, FEA, mechanics & materials, computer graphics, educational robotics
Dr. Hisham Hegab	BH 256	microfluidics, microscale heat transfer, numerical simulation of thermal devices/systems, FEA
Dr. Chad O'Neal	IfM 213	Microelectromechanical systems (MEMS), piezoelectrics, nanomachining, wafer-level packaging
Dr. Heath Tims	BH	Dynamic systems, modeling, controls, mechatronics, robotics, automotive