

# MECHANICAL ENGINEERING, M.S.E.

## Program Educational Objectives

1. Advance in their professional careers and pursue continuous learning in areas relevant to their long-term goals.
2. Advance the engineering discipline through their professional activities such as research, technical leadership, and project management.
3. Contribute to professional societies and demonstrate ethical conduct.

## Learning Outcomes

1. An ability to apply knowledge of mathematics, science, and engineering to solve engineering (societal) problems.
2. An ability to conduct graduate level research using skills learned in various courses and publish their results in journals and/or conferences.
3. An ability to function in teams, and communicate effectively.

## Admission Requirements

All applicants must possess a Bachelor of Science (B.S.) degree or an undergraduate engineering degree, which shall include at least:

1. 3 semester hours (1 course) of general chemistry.
2. Mathematics courses through differential equations.

Those applicants who do not possess an engineering degree, in addition to items 1 and 2 above, should complete the following five courses with an average grade of B (3.0) or better. These are: Mechanics of Material, Dynamics, Thermodynamics, Fluid Mechanics, and Heat Transfer.

A completed application form and \$50 application fee (completed online at LMU Graduate Admission). Admission into the program is in strict conformity with the requirements for all graduate students set forth by the LMU Graduate Division. Upon review of the student's undergraduate and professional preparation, additional admission requirements may be set by the Mechanical Engineering Department. Students applying for the combined B.S./M.S. degrees must apply in the Fall semester of their senior year, indicating the "Combined B.S. and M.S." on their application form.

## Program Requirements

### Requirements for Master of Science in Engineering Degree, major in Mechanical Engineering (30 semester hours)

The candidate for the Master of Science in Engineering degree in Mechanical Engineering must satisfy the following requirements:

1. Complete MECH 604 Engineering Mathematics.
2. Complete an additional 27 semester hours (9 courses) from MECH 500 and 600 level courses.
3. At least 12 semester hours must be at the 600 level, including MECH 604 Engineering Mathematics.  
A maximum of one elective course in another engineering department may be taken with the consent of the Graduate Program Director. The Thesis Option (MECH 686 Master's Thesis) may be chosen to satisfy

up to 6 semester hours of these elective course requirements (see below).

4. Maintain a minimum cumulative GPA of 3.0 ("B") for all coursework.
5. A maximum of four courses (12 semester hours) may be taken in any given semester.
6. Thesis Option: With the consent of the Graduate Director, the student may elect a thesis. The thesis will satisfy 6 semester hours of the elective mechanical engineering course work requirements. The student may enroll for a maximum of 3 semester hours of Master's Thesis in any given semester (MECH 686 Master's Thesis). The student electing the thesis option must obtain a thesis advisor before Graduate Director consent will be considered. Formal thesis requirements must be obtained from the Graduate Program Director.

### Requirements for the Combined B.S.E./M.S.E. Degrees, major in Mechanical Engineering

*(30 semester hours)*

Only LMU Seniors in Mechanical Engineering with a GPA of 3.0 or greater are eligible to apply for the combined degree program. The student must apply for admission before the end of the Fall semester of the senior year. The candidate for the Combined B.S./M.S. in Engineering degree in Mechanical Engineering must satisfy the following requirements:

1. Students may count one 500-level class from their undergraduate degree towards their master's degree. Therefore, the student must complete 27 semester hours from MECH 500- and 600-level courses.
2. The student should take two 500- or 600-level courses during Summer Session immediately following the senior year. At least three courses per semester are typically taken during the first year of the program.
3. Complete MECH 604 Engineering Mathematics.
4. A maximum of one elective course in another Engineering department may be taken with the consent of the Graduate Program Director.
5. Thesis Option: With the consent of the Graduate Director, the student may elect a thesis. The thesis will satisfy 6 semester hours of the elective mechanical engineering course work requirements. The student may enroll for a maximum of 3 semester hours of Master's Thesis in any given semester (MECH 686 Master's Thesis). The student electing the thesis option must obtain a thesis advisor before Graduate Director consent will be considered. Formal thesis requirements must be obtained from the Graduate Program Director.