

**DEGREE/PROGRAM CHANGE
FORM C**

Fields marked with * are required

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Initiator's Rank / Title* Director of Graduate Programs

Faculty Contact* Nader Ebrahimi

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Department* Mechanical Engineering

Division

Program

Branch

Proposed effective term:

Semester

Fall ▼

Year

2008 ▼

Course Information

Select Appropriate Program

Graduate Degree Program ▼

CIP Code

Name of New or Existing Program

* MS and PhD Mechanical Engineering

Catalog Page Number

447

Select Category

Degree ▼

Degree Type

MS and PhD

Select Action

Revision ▼

Exact Title and Requirements as they should appear in the catalog.
See current catalog for format within the respective college (enter text below or upload a doc/pdf file)

[ME Grad Programs Form C.pdf](#)

☐ **This Change affects other departmental program/branch campuses**

Reason(s) for Request * (enter text below or upload a doc/pdf file)
Over the years, numerous modifications have been made to the ME Graduate Programs section in the UNM Catalog. Unfortunately, the result of all these changes is now amounting to a disjointed and, arguably, incorrect verbiage. To remedy this undesirable situation, a complete re-write of the section is being offered that conforms to our current practice and requirements. The essential content is mainly the same, but the text has been considerably re-organized and streamlined for clarity and lucidity.

Statements to address budgetary and Faculty Load Implications and Long-range planning * (enter text below or upload a doc/pdf file)
There are no budgetary and Faculty Load Implications and Long-range planning issues involved.

Graduate Programs

Director of Graduate Programs

Nader Ebrahimi, Ph.D.

Graduate Programs Website: www.unm.edu/~ebrahimi/Graduate/Welcome.htm

Career Potentials

The graduate programs offered in the department are planned to prepare graduates for professional engineering work in private industry or governmental laboratories or for teaching/research positions. The focus is on the fundamental concepts in the selected research area, with elective and supporting work to complete the study program.

Application Information

We welcome applications from students who have earned distinguished academic records. Results of the Graduate Record Examination (GRE) General Test must be submitted to the Department prior to admission.

The following deadlines apply:

	Domestic Applicants not Requesting Financial Aid (TA/PA)	International Applicants and Domestic Applicants Requesting Financial Aid (TA/PA)
Fall	July 30	March 1
Spring	November 30	August 1
Summer	April 30	N/A

The Director of Graduate Programs makes admission decisions. Applicants must hold (or will have completed by the time they arrive) an accredited Bachelor of Science in Mechanical Engineering (BSME) degree and at least a B average in their final two years (or their final, earned 60 credit hours) of their last degree.

Applications from individuals with a B.S. degree in other Engineering disciplines, Math, Computer Science, and Physical Sciences (such as Physics and Chemistry) are also considered. To qualify for a graduate degree, applicants are expected to have at least an undergraduate-level exposure to most of the core ME disciplines. Those who are deemed deficient may be asked to take additional (leveling) courses.

General Degree Requirements

All graduate students in Mechanical Engineering are required to complete a set of core courses as part of an MSME or PhD programs. PhD students may satisfy these requirements with equivalent courses taken as part of an MS program as approved by the ME Graduate Director. Courses taken at the ME 400-level are not accepted and may not be repeated at the ME 500-level to satisfy the core requirements. The ME Graduate Core consists of four courses:

- 1) one mathematics course, selected from:
 - ME 500 Numerical Methods in Mechanical Engineering
 - ME 504 Computational Mechanics
 - CHNE 525 Methods of Analysis in Chemical & Nuclear Engineering
 - Any MATH/STAT 5XX course
- 2) one thermal science course, selected from:
 - ME 520 Advanced Thermodynamics I
 - ME 530 Theoretical Fluid Mechanics I
- 3) one solid mechanics course, selected from:
 - ME 501 Advanced Mechanics of Materials
 - ME 512 Introduction to Continuum Mechanics
 - ME 540 Elasticity
- 4) one dynamics & controls course, selected from:
 - ME 516 Applied Dynamics
 - ME 580 Dynamic System Analysis
 - ME 581 Digital Control of Mechanical Systems

Equivalent graduate-level courses taken at another institution may be used to satisfy this requirement, but this must be decided on a case-by-case basis by the Graduate Director.

Degrees Offered

Detailed degree requirements are explained in the ME Graduate Manual as a supplement to the UNM Graduate Catalog. The Mechanical Engineering Department offers the following graduate degrees.

Master of Science in Mechanical Engineering (MSME)

A minimum of 24 hours of 500-level credit is required for all students pursuing the MSME degree program.

Plan I (Thesis) – This degree plan requires 31 semester credit hours. Six (6) credit hours (ME 599) will be required for a thesis. A seminar course must be taken for two semesters.

Plan II (Non-Thesis), “Research” Track – This degree plan requires 34 semester credit hours. Three (3) credit hours (ME 559) will be required for a project. A seminar course must be taken for two semesters.

Plan II (Non-Thesis), “Coursework-Only” Track – This degree plan requires 32 semester credit hours. Two (2) credit hours (ME 551 or 552) is required for a “Problems” course.

Optional “Concentration”: Manufacturing Engineering - The MSME with Manufacturing Concentration requires 37 semester credit hours and a three-month industrial internship in a

manufacturing setting. At least three electives for this program must be selected from a set of engineering science courses defined by the department.

Notes Regarding Master of Engineering in Manufacturing Engineering (MEME)

The MEME degree is offered by the Manufacturing Engineering Program (MEP). This program is (administratively) separate from the ME Department at the University of New Mexico and is housed in the Manufacturing Technology and Training Center (MTTC), located in the South Campus. Details of this degree program are found in the “School of Engineering” section of this Catalog.

Ph.D. in Engineering

Concentration in Mechanical Engineering

The Doctor of Philosophy degree requires 54 semester credit hours beyond the bachelor’s degree, exclusive of the dissertation credit. Details of all special requirements are subject to departmental policy.

Course Requirements - In addition to the general University doctoral degree requirements listed in the Graduate Programs section of the UNM Catalog, students pursuing a Ph.D. in Engineering with a concentration in Mechanical Engineering must meet the following criteria:

1. Four courses will comprise the Mechanical Engineering Graduate Core (see above).
2. Each Ph.D. student must have one hour of seminar credit on his/her program. The student shall register for ME 591/592 for three semesters while attending the seminars. In the first two semesters, registration in ME 591/592 may be for zero credit hours. In the third semester the student must register for one credit hour.

Qualifying Examination

Ph.D. students must pass the Mechanical Engineering Qualifying Examination before they form a Committee-on-Studies and file the Advancement to Candidacy form. Students must take the Qualifying Examination no later than the second semester in the Mechanical Engineering Graduate program as a Ph.D. student.

Comprehensive Examination

Before a student may complete this requirement, he/she must have passed the Qualifying examination. The Comprehensive examination must be administered and passed in the same semester the Candidacy form is approved by the Graduate Director and the Dean of Graduate Studies.

Defense of Dissertation

All candidates must pass a Final examination (Defense of Dissertation). The Dissertation Committee conducts the defense of the dissertation.