

COVER SHEET
Location NOTIFICATION OF INTENT
(Location NOI)

Program Information

Program Name: Department of Mechanical Engineering

Institution Name: University of Washington

Degree Granting Unit: College of Engineering
(e.g. College of Arts and Science)

Degree: Master of Science in Engineering Level: Master Type: (of) Science
(e.g. B.S. Chemistry) (e.g. Bachelor) (e.g. Science)

Major: Mechanical Engineering CIP Code: 14.1904
(e.g. Chemistry)

Minor: NA
(if required for major)

Concentration(s): NA
(if applicable)

Proposed Start Date: Spring 2008

Projected Enrollment (FTE) in Year One: 2 FTE At Full Enrollment by Year: 2009 : 5 FTE

Funding Source: State FTE Self Support Other

Mode of Delivery

Single Campus Delivery _____
(enter locations)

Off-site _____
(enter locations)

Distance Learning _____
(enter formats) Web-Based Streaming Video

Substantive Statement of Need

Attach Sheet

Contact Information (Academic Department Representative)

Name: John Kramlich

Title: Professor and Associate Chair for Academics

Address: University of Washington, Department of Mechanical Engineering, Box 352600, Seattle, WA 98195-2600

Telephone: 206-543-5538

Fax: 206-685-8047

Email: kramlich@u.washington.edu

Endorsement by Chief Academic Officer Date

Substantive Statement of Need

The Department of Mechanical Engineering offers two degrees at the master level, the Master of Science in Mechanical Engineering (MSME) and the Master of Science in Engineering (MSE). The distinction between these two courses of study is germane to the present application, so we will briefly summarize the role of these two degrees.

MSME. This degree has traditionally been recognized as a professional engineering degree. Possessing this degree implies that the holder has all the training associated with the BSME degree. Thus, entry into the MSME program requires an undergraduate degree in mechanical engineering, or a very closely allied discipline such as aeronautics and astronautics. Those not having this undergraduate background (*e.g.*, a physics major) can still enter the MSME program, but only by completing the entire suite of junior-level undergraduate required courses (approximately 45 credits).

MSE. This program allows students to pursue graduate-level study in mechanical engineering without having an undergraduate mechanical engineering background. The entry requirements are the basic physics, chemistry, mathematics, and engineering fundamentals classes (*e.g.*, statics, materials, dynamics) that are required for undergraduate admission to the BSME program. Enrollment in this degree program has grown substantially in the last few years. This is mostly because the increasingly interdisciplinary nature of graduate work and research in mechanical engineering is drawing students with unconventional backgrounds. For example, we see many more students with biological training, or polymer chemistry experience wanting to come into our program.

For over 20 years, the MSME has been offered as an on-campus degree, and as a distance-learning program through EDGE (Education at a Distance for Growth and Excellence). The principal clientele for the EDGE program has been working engineers who complete a non-thesis version of the degree by taking one course each quarter. Additional students are not in the workforce, or must stay at home due to family obligations.

We are starting to see demand for a distance-learning version of the MSE degree, *i.e.*, a demand for master-level instruction in mechanical engineering by those who do not have professional undergraduate mechanical engineering backgrounds. The goal of this proposal is to add a distance-learning component to the existing MSE program. In other words, we wish to add an MSE-EDGE degree path to our three existing master degree paths, MSME, MSME-EDGE, and MSE. Since the curriculum for the MSE is already in place, as is the distance-learning delivery infrastructure (from the MSME-EDGE program), this proposal entails no new investment. As a self-sustaining program, the incremental costs of the new students will be completely covered by their tuition payments.

Our department presently admits around 55 new graduate students each year. About 15 are PhD students, or MS students who plan on staying for a PhD. Of the 40 who enter for a terminal MS degree, about 10 are MSME-EDGE students, about 10 are MSE students, and 20 are on-campus MSME students. The MSE cohort was almost zero five years ago. We anticipate a similar demand for the MSE-EDGE path based on student requests.

Most of the new MSE-EDGE students will already be employed, and will stay with their jobs throughout their degree program. Based on the inquiries received to date, many of the students will be employed in growth areas: biomechanics, molecular biology, nanotechnology applications, and advanced materials.

Table 2: Student Enrollment Targets

Year	1	2	3	4	5
Headcount	2	4	6	10	10
FTE	1	2	3	5	5
Program Graduates	0	2	4	6	10