

Joint Baccalaureate-Masters and Baccalaureate- Doctoral Programs in Mechanical Engineering

I. Program Goals

The joint ***Baccalaureate-Masters*** program in the Department of Mechanical Engineering at Old Dominion University is designed to provide a unique opportunity to suitably qualified students to obtain a combined undergraduate and graduate degree in Mechanical Engineering in a period of five years after graduating from high school. The anticipated duration of the joint ***Baccalaureate-Doctoral*** degree is approximately eight years after graduation from high school.

The program provides students with a rigorous and thorough education in the basic principles of Mechanical Engineering, together with graduate education. The program prepares students in many rapidly advancing areas of Engineering, of interest to the State of Virginia, to the nation, as well as to the International Community. It is expected that graduates of this program will contribute rapidly and substantially to the field of Engineering in global economic environment that is already upon us. A sample curriculum outlining the courses to be taken in this program so that the degree requirements can be met in five years is available.

II. Special Opportunities Provided by Program

The program provides unique opportunities for students to be involved in industrial, governmental and academic research projects, in areas of engineering and engineering technology where there is great need for technical expertise. Old Dominion University's geographical proximity to such enterprises as the NASA Langley Research Center, Newport News Shipyard, the Thomas Jefferson National Laboratory, and Norfolk's unique position as host to the largest naval base in the world, provide excellent opportunities for students in this program to be involved in practical engineering and research projects, while simultaneously pursuing their university education. It is expected that with, suitable guidance and approval from faculty, students may be able to use some of this engineering experience to satisfy a portion of academic credit requirements.

The program is planned for qualified students to advance smoothly from undergraduate education to graduate admission. Successful graduates of this program will be afforded accelerated entry into higher than entry-level positions into the profession. The students' unique preparation will create opportunities for rapid advancement in their careers.

Some students in this program will be able to take advantage of very attractive fellowships especially created by Federal and State Agencies for suitably qualified students wishing to pursue graduate degrees in engineering. These fellowships include: Undergraduate and Graduate Fellowships provided by the Virginia Space Grant Consortium; Undergraduate and Graduate Fellowships from NASA, including the Langley Aerospace and Research Summer Scholarships and the NASA Graduate Student Research Program Fellowships; the Environmental Protection agency Graduate Fellowships; the National Science Foundation Graduate Fellowships; the Office of Naval Research and the U.S. Air Force Graduate Fellowships.

III. General Guidelines

- (1) The Program will grant BS-ME, BS-MS and BS-Ph.D. degrees.
- (2) Entrance into the program will be available to suitably qualified students in the freshman, sophomore, junior years, as well as to qualified transfer students.
- (3) The continuing eligibility of students in this program will be based upon their having met the standards of performance expected at the end of the sophomore, junior and senior years.
- (4) The BS-MS track will require 30 credits beyond the credits needed for a baccalaureate in Engineering. Six credits taken at the senior level will be regarded as satisfying both the baccalaureate and masters requirements. Hence, students in this track will be required to accumulate an additional 24 new credits beyond the baccalaureate, as opposed to the 30 credits that students in the regular masters track need to take.
- (5) The BS-Ph.D. track will require a student to earn a total of the following graduate credits: 42 graduate course credits (12 graduate courses, of which at least 5 must be at the 800 level). In addition, these students need to earn 24 hours of dissertation credit, which is based on their research. Generally, the dissertation results in at least one or two papers in archival refereed, highly reputable journals, in the student's area of specialization. This 42+24 credits total is smaller than the 30+24+24 graduate credits that conventional doctoral student have to acquire. It is expected that highly qualified students will be able to use this to their advantage by making rapid progress in their research and by making significant original contributions to their field of research.
- (6) Students on the BS-MS track performing exceptionally well at the end of the fifth year and wishing to transfer to the BS-Ph.D. will have that option available.