

The University Senate of Michigan Technological University

PROPOSAL 46-04

MASTER OF SCIENCE IN FOREST MOLECULAR GENETICS AND BIOTECHNOLOGY

SPIN-OFF FROM MASTER OF SCIENCE IN FORESTRY

The School of Forest Resources and Environmental Science at Michigan Technological University presently offers a Master of Science in Forestry, which services students who desire Plan A, B, and C Masters degree programs in forest ecology, forest management, molecular genetics, wildlife ecology and wood science. This proposal is to create a spin off program to be called Master of Science in Forest Molecular Genetics and Biotechnology. As the field of forestry becomes more specialized, this spin-off Master's program will better represent students' education and expertise, which will be beneficial for them in the highly competitive job market.

General Program Description

The proposed Master of Science degree is a spin-off of the current Master of Science degree in Forestry. No new courses or faculty are necessary for this program, which is built around the areas of specialization already emphasized in the existing Master of Science program. Students applying for this program are expected to have a Bachelors degree. Additional course work requirements for admission may be required depending upon the student's background.

Master of Science in Forest Molecular Genetics and Biotechnology (Plans A, B, and C)

The Master of Science in Forest Molecular Genetics and Biotechnology degree program (Plans A, B, and C) will be directed at students doing research projects or acquiring a course work-only degree in the fields of forest ecology and forestry. The program will provide skills and knowledge in the areas of genetic engineering of trees, lignin and cellulose biosynthesis, tree genomics and bioinformatics, genetic control of flowering and pollution tolerance in trees and molecular ecology.

Requirements - 30 credits according to University Masters degree regulations for plans A, B, and C, including:

Advanced Statistics

FW5800 Master's Graduate Seminar

FW5810 Research Methods

Program Regulations

The program of study and research for each student will be planned and supervised in accordance with existing University and School policies. The student's Advisory Committee (which includes the student's Advisor) must insure that each MS candidate's course work and research topic (where applicable) meets the standards of a Master's program. A minimum of 30 course work and/or research credit hours beyond the bachelor's degree is required for all master's degrees, as well as an oral examination. The proposed Master of Science degree program will have an open curriculum, whereby course work is approved by the student's advisory committee by at least the second semester of residence. For the proposed Master of Science program, graduate students enrolled in the Peace Corps Fellows and Master's International Programs will follow specific curricula designed for the programs as designated in Memoranda between Michigan Tech, the Peace Corps, and other sponsoring agencies.

Advisory Committee

The student's Graduate Advisory Committee should be appointed by the second semester of residence. The Advisory Committee will consist of at least four members, including one member designated as Chair. The chair is the student's graduate advisor. The Chair must be a member of the School of Forest Resources and Environmental Science and the MTU Graduate School faculty. At least one member of the Advisory Committee must be from outside the School. The Advisory Committee must approve the design for research (Plan A) or report (Plan B), and the necessary course work to successfully complete the project. The student's Advisor is responsible for ensuring the research/thesis or report is within the capability of the student and can be completed within a reasonable period of time. The Advisor and the Advisory Committee are responsible for ensuring the research and course work fall within the Masters program selected by the student and the student's Advisor. The role of the Advisory Committee for Plan C students is to help the student choose course work, keep track of the student's progress in his/her course work, and to test the student's knowledge on his/her course work at the student's oral defense.

General Procedures

A plan of work showing the courses to be taken, the topic of the thesis/report research (Plans A and B), and the thesis/report format (Plans A and B) will be prepared by the student with his/her Advisor. The student's Advisory Committee will review the course work (Plans A, B, and C) and design of study (Plans A and B) by the end of the second or third semester in residence. For a plan A and B Masters, the study plan must be presented to the student's Advisory Committee no later than the end of the second semester in residence (except for Peace Corps students who may develop their study plan while in residence in their country). A copy of the approved study plan will be given to all committee members once approved by the Advisory Committee.

All graduate students are required to be enrolled each academic term following entry into the Masters program until completion of all degree requirements. A full-time student on an assistantship must enroll in a minimum of 9 credit hours per semester and not more than 12 credit hours each semester. During the summer, a full-time student on an assistantship must enroll for one credit hour.

All Masters students will go through an oral defense. The oral defense for Plan A and B Masters students will focus around the student's thesis or report and their course work. Early in the student's last semester, a draft of the thesis or report should be submitted to the student's Advisor. Following review and revisions by the Advisor, the thesis or report should be submitted to the student's Advisory Committee at least two weeks before the scheduled oral examination. Plan A and B students must give a scheduled oral presentation before their defense. The oral defense for Plan C students will focus on their course work. All work required for the MS degrees must be completed within five years after first registering for classes.

Grades

All grades must be B (3.0 on a 4.0 scale) or better in the major subject area. The Associate Dean of the School of Forest Resources and Environmental Science can approve no more than six credits of C (2.0) in a cognate department. The student must maintain a cumulative grade point average of 3.0 or better.

Library Resources

Library resources are adequate. No additional material is necessary. Presently, interlibrary loans fulfill our periodical and book needs.

Faculty

All of the faculty in the School of Forest Resources and Environmental Science hold the PhD degree, and many are considered national and international experts. They share a commitment to quality teaching and research and to providing an excellent learning environment. Active in

their professions, the faculty share their expertise and keep current through research and by participating in conferences, presenting seminars, and publishing in professional journals: There are 20 research and tenure-track faculty, including administrators (Dean and Associate Dean) who presently advise graduate students. Faculty resumes can be examined at the following Internet link: http://forest.mtu.edu/faculty_staff.html

New Course Description

No new courses will be offered for this program.

Accreditation Requirements

No specific requirements for any type of accreditation.

Planned Implementation Date

Fall 2004

Adopted by Senate: 28 April 2004

Approved by Administration: 4 May 2004