Department of Medical Laboratory Sciences

Program Type: 

Degree Type: 

Provide a brief summary of the proposed program changes and describe the rationale for the change(s):

This accelerated degree program provides high performing students with the opportunity to complete a bachelor’s degree in Applied Molecular Biology and Biotechnology and a master’s degree in Medical Sciences in less time at less cost than completing both programs individually. With a combined degree, students will have specialized, in-depth professional skills knowledge and will be prepared to succeed within the increasingly complex biotechnology sector. In today’s competitive employment market, individuals seeking management and leadership positions in the laboratory-based professions require a graduate level degree. The 4+1, BS/MS in AMBB/MMS will allow students to specifically tailor their graduate program of study to meet their specific career goals whether it be laboratory administration, research or laboratory science education.

**No new courses are required for the new curriculum.**

This program is formulated by the combining of previously approved programs (BS & MS) offered through the Department of Medical Laboratory Sciences.  Other units will not be affected by the proposed changes.

**Resolution:**

WHEREAS, the Department of Medical Laboratory Sciences (MLS) in the College of Health Sciences offers successful programs for the BS in Medical Laboratory Sciences, Medical Diagnostics, and Applied Molecular Biology and Biotechnology, which offer students skills and knowledge necessary for careers in the biomedical and clinical laboratory science-based health professions, and

WHEREAS, the Department of Medical Laboratory Sciences offers the MS in Medical Sciences to meet the needs of individuals seeking management and leadership positions in the laboratory-based professions, and

WHEREAS, MLS has received many inquiries over the last several years from individuals who are interested in pursuing a combined BS/MS degree, and

WHEREAS, MLS graduates of a combined degree will have specialized, in-depth professional skills knowledge and will be highly prepared to succeed within the increasingly complex biotechnology sector, and

WHEREAS, the existing undergraduate and graduate programs within the Department of Medical Laboratory Science already provide the foundational coursework, laboratory teaching and administrative framework for such a program, and,

WHEREAS, the program has received the full support of faculty as well as the faculty in all programs affected by the curriculum, and

WHEREAS, the proposed major contributes to one of the milestones on the University’s “path to prominence” to achieve excellence in professional education; be it therefore

RESOLVED, that the Faculty Senate recommends the approval of the establishment of a new 4+1, combined BS/MS in Applied Molecular Biology and Biotechnology (BS) and Medical Sciences (MS).

**Undergraduate Phase**

Description

While completing the BS in Applied Molecular Biology and Biotechnology degree, students will take six (6) credits of graduate-level courses in lieu of regularly required undergraduate courses in the major.  The six credits will be counted toward both the Bachelor of Science degree and the Master of Science.   Following completion of the Baccalaureate degree, students will complete an additional 26 credits of coursework to meet the course requirements for the MMS degree.  The suggested sequence is as follows:

Courses

MEDT 603 Research Design (3cr.)

MEDT 690 Genetics and Molecular Diagnostics for the Clinical Laboratory (3cr.)

MEDT 803 Graduate Research Seminar (1cr.)

**Graduate Core Courses**

Title

Graduate Core Courses

Description

Students must complete 12 credits of graduate core coursework, including 3.0 total credits of seminar.  Some of these can be completed during the undergraduate phase of the 4+1 program.

Courses

MEDT 604 Methods in Bioscience Education (3cr.)

MEDT 605 Regulatory and Fiscal Issues in Laboratory Management (3cr.)

MEDT 803 Graduate Research Seminar (1cr.)

Fieldwork Experiences

Title

Fieldwork Experiences

Description

Students must earn 8 credits in the fieldwork experiences category through an individualized combination of the following courses: Advanced Practica, Laboratory Education and Administration, Laboratory Administration and Management.

Courses

MEDT 611 Advanced Practicum I (2cr.)

MEDT 612 Advanced Practicum II (2cr.)

MEDT 613 Advanced Practicum III (2cr.)

MEDT 614 Advanced Practicum IV (2cr.)

MEDT 631 Laboratory Education Administration and Instruction (2cr.)

MEDT 632 Laboratory Administration and Management (2cr.)

Scholarly Product & Concentration Electives

Title

Scholarly Product & Concentration Electives

Description

To meet the scholarly product requirement, students may complete a literature review/health services/ outcomes based research project course MEDT 800 (6 credits total) or engage in a wet-bench research project with a selected research mentor MEDT 868 (6 credits total).  Students should meet with the MMS program director to determine which course selection best meets their educational needs.

Students should complete a minimum of 6 concentration elective credits.  See the MMS program handbook for a list of potential concentration elective courses. Selections are tailored to meet each student’s educational goals.

Courses

MEDT 815 Contemporary Topics Research (6cr.)

MEDT 868 Research (3cr.)

MEDT - 603 - Research Design (3cr.)

MEDT - 604 - Methods in Bioscience Education (3cr.)

MEDT - 605 - Regulatory and Fiscal Issues in Laboratory Management (3cr.)

MEDT - 611 - Advanced Practicum I (2cr.)

MEDT - 612 - Advanced Practicum II (2cr.)

MEDT - 613 - Advanced Practicum III (2cr.)

MEDT - 614 - Advanced Practicum IV (2cr.)MEDT - 631 - Laboratory Education Administration and Instruction (2cr.)

MEDT - 632 - Laboratory Administration and Management (2cr.)

MEDT - 690 - Genetics and Molecular Diagnostics for the Clinical Laboratory (3cr.)

MEDT - 691 - Molecular Diagnostics (3cr.)

MEDT - 692 - Application of Molecular Diagnostics Techniques (3cr.)

MEDT - 803 - Graduate Research Seminar (1cr.)

MEDT - 815 - Contemporary Topics Research (6cr.)

MEDT - 868 - Research (3cr.)

**Expected Outcomes** 

Faculty who will be affiliated with the program plan to work with the UD Center for Educational Effectiveness to fully develop the program’s assessment plan. This work will entail the development of a curriculum map to align selected courses with the intended learning outcomes of the program.  
  
Direct Measures. Four Learning Outcomes have been identified for the program. Upon completion of the program, all students will:  
  
1. Employ research methods to assess a problem in the field of medical science in an ethical manner. Course Assessed: MEDT 603 Research Design  
  
2. Communicate research findings in an effective manner. Course Assessed: MEDT 803  
Graduate Seminar  
  
3. Demonstrate the ability to quantitatively analyze data using several different statistical procedures. Course Assessed: MEDT 868 Experimental Research or MEDT 815 Contemporary Topics Research  
  
4. Evaluate and assess regulatory and fiscal situations encountered in laboratory settings and make best-practice, evidence-based recommendations. Course Assessed: MEDT 605 Regulatory and Fiscal Issue in Laboratory Practice  
  
Indirect Measures.  
Alumni Surveys Six Months, One-Year and Five-Year Post-Graduation Surveys of graduates will be conducted one-year and five-year post-graduation. The surveys will focus on two major areas: program/education effectiveness and demographic information pertaining to employment status and/or graduate/professional school enrollment.  
  
Field Experience Supervisor Surveys  
Upon completion of the field experience(s), the field experience supervisor will complete a rubric designed to assess the affective skills demonstrated by the student.