

# UNIVERSITY FACULTY SENATE FORMS

## Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. Detailed instructions for the proposal should be followed. A [checklist](#) is available to assist in the preparation of a proposal. For more information, call the Faculty Senate Office at 831-2921.

**Submitted by:** Esther E. Biswas-Fiss phone number X2912

**Department:** Medical Laboratory Sciences email address ebiswas@udel.edu

**Date:** October 26, 2016

**Action:** Add a new MS in Medical Sciences  
(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

**Effective term** 17F  
(use format 04F, 05W)

**Current degree** \_\_\_\_\_  
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

**Proposed change leads to the degree of:** \_\_\_\_\_  
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

**Proposed name:** Master of Science in Medical Sciences  
Proposed new name for revised or new major / minor / concentration / academic unit (if applicable)

### Revising or Deleting:

**Undergraduate major / Concentration:** \_\_\_\_\_  
(Example: Applied Music – Instrumental degree BMAS)

**Undergraduate minor:** \_\_\_\_\_  
(Example: African Studies, Business Administration, English, Leadership, etc.)

**Graduate Program Policy statement change:** \_\_\_\_\_  
(**Must attach** your Graduate Program Policy Statement)

**Graduate Program of Study:** \_\_\_\_\_  
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

**Graduate minor / concentration:** \_\_\_\_\_

**Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, either describing the new program or highlighting the changes made to the original policy document.**

**List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?**

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the [Course Challenge](#) list. If there are no new courses enter "None")

The following new courses will be required for the curriculum, and will form the basis of the core and flexible field work experiences. Three new faculty hires are approved and currently under-recruitment and will provide the necessary teaching resources for this program.

MEDT 603	Research Design
MEDT 604	Methods in Bioscience Education
MEDT 605	Regulatory and Fiscal Issues in Laboratory Management
MEDT 611-614	Advanced Practicum I-IV
MEDT 631	Laboratory Education Administration and Instruction
MEDT 632	Laboratory Administration and Management
MEDT 815	Contemporary Topics Research

**Supply support letter from the Library, Dean, and/or Department Chair if needed**

(all new majors/minors will need a support letter from the appropriate administrator.)

See Appendix for letter of support from College of Health Sciences Deputy Dean, Susan Hall.

**Supply a resolution for all new majors/programs; name changes of colleges, departments, degrees; transfer of departments from one college to another; creation of new departments; requests for permanent status. [See example of resolutions.](#)**

WHEREAS, the Department of Medical Laboratory Sciences (MLS) in the College of Health Sciences has offered a successful program for the BS in Medical Laboratory Sciences offering students skills and knowledge necessary for careers in the profession of clinical laboratory science, and

WHEREAS, Workforce demands support the need for training programs aimed at generating a cadre of leaders in the medical laboratory science based professions, and

WHEREAS, there is currently no MS program at the University of Delaware specifically for students wishing to specialize in medical sciences, and

WHEREAS, there is interest and expertise in medical sciences within the Department of Medical Sciences, College of Health Sciences and across other academic units in the University, and

WHEREAS, Departmental faculty working in the area of medical science have experience mentoring graduate students through other graduate programs, and

WHEREAS, the absence of a focused MS program specific to medical sciences makes it difficult to recruit excellent students interested in this area, and

WHEREAS, the College of Health Sciences currently has in place the faculty, the laboratories, and other resources needed in order for the proposed MS in Medical Sciences to be successful, and

WHEREAS, the proposed program contributes to the University's "Path to Prominence": to become a premier research and graduate university; be it therefore

RESOLVED, that the Faculty Senate recommends provisionally for five years the approval of the establishment of a new Master of Science in Medical Sciences.

**Explain, when appropriate, how this new/revised curriculum supports the 5 goals of undergraduate education:** <http://www2.udel.edu/gened/>

N/A

**Identify other units affected by the proposed changes:**

(This would include other departments/units whose courses are a required part of the proposed curriculum. Attach permission from the affected units. If no other unit is affected, enter "None")

None

**Describe the rationale for the proposed program change(s):**

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

The Master of Science in Medical Sciences (MMS) is designed for practicing professionals who want to advance their knowledge and skills in the clinical laboratory sciences and develop new proficiencies needed to meet the challenges of a changing profession and fast-paced development in technology. In today's competitive employment market, individuals seeking management and leadership positions in the laboratory-based health professions require a graduate level degree. The MMS will allow students to specifically tailor their program of study to meet their specific career goals whether it be laboratory administration, research or laboratory science education. In addition, the curricular flexibility of this program will allow laboratory professionals to gain knowledge and technical competency in emerging areas of practice in the laboratory such as molecular diagnostics.

The MMS is designed for individuals holding a baccalaureate degree in a laboratory field with an interest in advancing theoretical and clinical learning, practice, and research. The program prepares the student for advanced practice opportunities with academic, industrial and clinical professional growth through:

- advanced expert-knowledge and skills
- critical thinking proficiency
- interdisciplinary collaboration through a focused advanced practica
- increased skills in evidence-based practice, and research methodologies
- conduct of translational research in laboratory science

Individuals seeking leadership positions in laboratory management, education and research will earn an MS in Medical Sciences, through either full- or part-time study. Students must have a BS or a post-baccalaureate certificate in a laboratory field such as medical laboratory sciences, biotechnology, cytogenetic technology or cytotechnology. (Other laboratory professionals may be eligible, based on training and experience.) The program is *customized* to each student's unique interests and professional goals.

**Program Requirements:**

(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.) [See example of side by side.](#)

The MS in Medical Sciences (MMS) is built on 32 – 34 graduate credits that include both core courses, fieldwork experiences and individualized concentration electives. The curriculum can be completed in as little as three semesters (accelerated format), in a traditional four semester format, or in an extended part-time format over the course of six-semester.

#### Core Courses

- Methods in Bioscience Education
- Research Design
- Research or Capstone Project
- Laboratory Administration Fieldwork
- Laboratory Education/Instruction Fieldwork
- Regulatory and Fiscal Issues in Lab Management

Students select 6-8 credits of concentration electives from graduate level courses offered throughout the University. These courses should focus on and reflect contemporary areas of clinical or research laboratory management, administration and advanced practice.

Concentration Areas include but are not limited to:

- management and supervision
- financial management
- regulatory and quality management
- advanced research skills
- population health

#### MS in Medical Sciences: Curriculum

		<b>SEMESTER CREDITS</b>
<b>CORE COURSES (12 credits)</b>		
MEDT 603	Research Design	3
MEDT 604	Methods in Bioscience Education	3
MEDT 605	Regulatory and Fiscal Issues in Laboratory Management	3
MEDT 803	Seminar (3 total, 1 per semester – 1.0 credit each)	3
<b>FIELDWORK EXPERIENCES (8 credits)<sup>1</sup></b>		
MEDT 611	Advanced Practicum I	2
MEDT 612	Advanced Practicum II	2
or		
MEDT 631	Laboratory Education Administration and Instruction*	2
MEDT 613	Advanced Practicum III	2
MEDT 614	Advanced Practicum IV	2
or		
MEDT 632	Laboratory Administration and Management	2

**SCHOLARLY PRODUCT & CONCENTRATION ELECTIVES (12-14)<sup>2,3</sup>**

MEDT 868 Research (2 total, 3 credits each) 6

or

MEDT 815 Contemporary Topics Research (2 total, 3 credits each) 6

Concentration Elective(s)<sup>3</sup> 6-8**Total Credits for the Master of Science in Medical Sciences** minimum 32

<sup>1</sup>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).

<sup>2</sup>To meet the scholarly product requirement, students may take a literature review/health services/ outcomes based research project course (MEDT 815) or engage in a wet-bench research project with a selected PI (MEDT 868). Students must meet with the MMS program director to determine which course best meets their educational needs.


<sup>3</sup>See Table 1 for a list of potential concentration elective courses. Selections are tailored to meet each student's educational goals.

**Table 1 - POTENTIAL CONCENTRATION ELECTIVE COURSES**

MEDT608	Molecular Preparatory Techniques	2
MEDT625	Basic Molecular Techniques	4
MEDT 690	Genetics and Molecular Diagnostics	3
MEDT 691	Molecular Diagnostics	3
MEDT 692	Application of Molecular Diagnostic Techniques	3
MEDT651	Cell and Tissue Culture Techniques	4
MEDT 627	Introduction to Flow Cytometry	2
MEDT635	Practical Genomic, Proteomics and Bioinformatics	3
MEDT626	Protein Purification & Characterization	3
KAAP655	Advanced Physiology of Exercise	3
KAAP680	Exercise, Nutrition and Bone Health	3
KAAP802	Human Cardiovascular Control	3
KAAP840	Advanced Human Anatomy	3
MEDT805	Biomarker Development	3
MEDT810	Evidence Based Practice	3
NTDT610	Overweight/Obesity Prevention and Management	3
NTDT611	Advanced Nutrition	3
NTDT630	Trace Minerals & Vitamins	3
NTDT640	Nutrition and Aging	3
NTDT655	Issues in International Nutrition	3
NURS621	Advanced Pathophysiology	3
NURS812	Responsible Conduct of Research	1 (online, fall)
BINF644	Bioinformatics	3
CISC636	Bioinformatics	3
CHEM641	Biochemistry	3
CHEM642	Biochemistry	3
EDUC856	Introduction to Statistical Inference	3

**ROUTING AND AUTHORIZATION:**

(Please do not remove supporting documentation.)

Department Chairperson  Date 11/18/16

Dean of College \_\_\_\_\_ Date \_\_\_\_\_

(By signing above, the Dean confirms that their college policies and bylaws have been followed correctly during consideration of the request described in this form.

The approval actions that were taken at the college level were (check all that apply) :

\_\_\_\_\_ college faculty vote;  college curriculum approval \_\_\_\_\_ college senate approval

Chairperson, College Curriculum Committee  Date 11/17/16

Chairperson, Senate Com. on UG or GR Studies \_\_\_\_\_ Date \_\_\_\_\_

Chairperson, Senate Coordinating Com. \_\_\_\_\_ Date \_\_\_\_\_

Secretary, Faculty Senate \_\_\_\_\_ Date \_\_\_\_\_

Date of Senate Resolution \_\_\_\_\_ Date to be Effective \_\_\_\_\_

Registrar \_\_\_\_\_ Program Code \_\_\_\_\_ Date \_\_\_\_\_

Vice Provost for Academic Affairs & International Programs \_\_\_\_\_ Date \_\_\_\_\_

Board of Trustee Notification \_\_\_\_\_ Date \_\_\_\_\_

Revised 9/22/2015/khs