

## MEMO

**To:** The UVM Faculty Senate  
**From:** Curricular Affairs Committee of the Faculty Senate, Stephen Everse, Co-Chair  
**Date:** March 15, 2022  
**Re:** Approval of a Proposal from the College of Nursing & Health Sciences for a New Minor in Medical Diagnostics

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On March 3, 2022, the Curricular Affairs Committee (CAC) approved (16 in favor, 0 against, 0 abstentions) a proposal from the College of Nursing & Health Sciences (CNHS) to create a new minor in Medical Diagnostics. Both the faculty in Biomedical and Health Sciences (BHSC) Department and the CNHS Curriculum Committee unanimously approved of this program. Zero public comment was received during the 30-day circulation.

### ***Program Description and Rationale***

This proposal was initiated by Medical Laboratory Science faculty in BHSC, who note that an estimated 70% of all medical decisions are based on laboratory tests, and current trends in medical diagnostics necessitate familiarity with laboratory medicine as key component of foundational education in a range of disciplines for which UVM already offers majors. The proposed new minor in Medical Diagnostics would offer students 18 credits of core and elective courses in which to develop basic knowledge in clinical laboratory techniques, diagnostic assays, and human disease. This minor would prepare students to interpret and evaluate laboratory data and to understand how it is used in clinical decision-making. It would be of benefit to students preparing for graduate health programs, and also for students heading toward non-clinical careers in public health, epidemiology, and health education (fields that call for knowledge of how diagnostic medicine informs clinical decision making, patient care, and public health assessments). Additionally, the minor would offer a new opportunity for UVM undergraduates to become involved with cutting-edge biomedical research. The proposed minor aligns with the specific missions of BHSC and CNHS to foster knowledge and train students to become leaders in health sciences, as well as with UVM's comprehensive commitment to "liberal education, environment, health, and public service."

### ***Justification and Evidence for Demand***

Minors offered by peer programs nationally suggest high demand and boast large enrollments.

### ***Relationship to Existing Programs***

The new minor has the potential to enhance the education of students in a range of majors (including, but not limited to, animal science, biochemistry, biology, biomedical engineering, chemistry, microbiology, molecular genetics, neuroscience, nutrition, and public health sciences) and students in the pre-health and pre-vet pathways. There is no overlap or redundancy with currently available minors at UVM. No substantial concerns were raised in the comment period, and the proposal has received letters of support from LCOM, CALS, and Dana medical library.

## **Curriculum**

The curriculum consists of 18 credit hours of core and elective courses currently offered by BHSC. The breakdown is as follows:

### Required Courses (9 credits)

MLS 101	Medical Diagnostic Techniques* (fall)	3 credits
MLS 210	Applied Medical Diagnostics*	3 credits
BHSC 281	Applied Molecular Biology (fall)	3 credits

\*new courses, which either have been or are being piloted, with course action forms and syllabi already submitted

### Electives (9 additional credits)

HLTH 135	Advanced Medical Equipment Systems	3 credits
MLS 221	Clinical Chemistry I (fall)	3 credits
MLS 222	Clinical Chemistry II (spring)	3 credits
BHSC 242	Immunology (spring)	3 credits
MLS 255	Clinical Microbiology II (fall)	3 credits
MLS 231	Hematology (fall)	3 credits
XXX	Other approved elective(s)	3 credits

There are two prerequisites (Human Cell Biology and Chemistry) for the courses required for the minor, and some additional foundational science courses are prerequisites for certain electives.

Curricular restrictions:

The minor in Medical Diagnostics is unacceptable with the major in Medical Laboratory Science, due to extensive course overlap. Only up to two courses in the minor can overlap with a student's major.

### **Admission Requirements and Process**

There will be an application process for the minor, which will be limited to a cohort of 30 students. Students must be accepted into the minor to be eligible to enroll in the courses.

### **Anticipated Enrollment and Impact on Current Programs**

The minor will increase course enrollments in core courses within medical laboratory science. The minor will not require laboratory sections for core and elective courses (though students in the minor may enroll in them if space allows, with priority being given to medical laboratory science majors). These core courses will be modified so that they can be taken with or without a lab section (for 3 or 4 credits, respectively). Two new permanent courses will be needed for the minor (Medical Diagnostic Techniques and Applied Medical Diagnostics), both of which have been or are being piloted, and relevant course action forms and syllabi have been formally submitted for approval.

### **Advising**

A current faculty member will be given 5-10% workload effort (depending on enrollment) to administer the program, which will include advising.

### **Assessment Plan**

There Minor has five specific outcomes. Upon completion, students should be able

1. To demonstrate basic knowledge in clinical laboratory techniques;
2. To determine the appropriate utilization of laboratory tests for screening, monitoring, therapy, and prognosis of human diseases;
3. To analyze and interpret laboratory data as it correlates with clinical symptoms;
4. To demonstrate professional conduct in an interprofessional community environment;
5. To articulate laboratory information in a variety of ways (verbal, written, media, etc.).

The assessment plan for the minor will take four years to roll out fully. Full assessment will involve:

- In even-numbered years (beginning in 2024) direct assessment via a sampling of case studies from 200-level courses (to evaluate student performance in test utilization, interpretation of laboratory data, and correlation with disease)
- In odd-numbered years (beginning in 2025) direct assessment of the MLS 210 presentation showcase (to evaluate student ability to articulate information about their civic/service-learning experience to a professional audience).
- Annually (beginning in 2026) indirect assessment via an exit survey completed by students finishing the minor.

Every year the Medical Laboratory Science Program director will review assessment results from the previous AY and present them to departmental faculty for discussion of potential revisions to the minor.

### ***Staffing Plan, Resource Requirements, and Budget***

No new faculty or staff appointments are needed. Enrollments in Medical Laboratory Science core courses will increase, but within limits that the current courses can accommodate. This increase will have only a slight impact on faculty workload. No anticipated new library resources are associated with the minor. Costs in addition to current budget is only one 10% maximum workload effort assigned to the faculty administrator of the program. Supplies needed due to increased enrollment in laboratory-based courses will be covered by student fees.

### ***Evidence of Support***

Initiated by the Biomedical Laboratory faculty in BHSC, the proposed minor has been approved by all BHSC faculty, as attested by the Department chair. The CNHS Curriculum Committee has likewise unanimously approved the proposal, and the CNHS Dean has submitted a letter of support and an attestation of the program's expected fiscal solvency. Additional letters of support were submitted by the Senior Assoc. Dean for Medical Education at LCOM, the CALS dean, and the Dean of Libraries.

### ***Summary***

We find the proposed minor in Medical Diagnostics to be well conceived, attentive to current trends in laboratory medicine and health science, and doable with UVM's current resources. If approved, it will offer a beneficial supplement to the undergraduate preparation of students in a range of majors for careers in health science that involve clinical decision-making, as well as non-clinical careers in fields such as public health, epidemiology, and health education. We recommend the approval of this proposal.

If approved by the Faculty Senate and the Board of Trustees, the new minor in medical diagnostics would go into effect during the 2022-2023 catalog year.