Stevenson University Catalog Addendum

2023-2024 SUO-Undergraduate Online Catalog

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Link to 2023-2024 Undergraduate Online Catalog

https://stevenson.smartcatalogiq.com/2023-2024/stevenson-university-online-undergraduate-catalog/

Applied Mathematics

Stevenson University Online

Link to 2023-2024 Undergraduate Online Catalog – Field of Study – Applied Mathematics

https://stevenson.smartcatalogiq.com/en/2024-2025/stevenson-university-online-undergraduate-catalog/undergraduate-fields-of-study/applied-mathematics/

Beverly K. Fine School of the Sciences

Department of Mathematics and Physics

Chair: Mark A. Branson, Ph.D.

Description

The applied mathematics major provides students with an array of courses that build mathematical skills. Students graduate with a solid background in mathematics and statistics and the ability to use data to solve problems in various disciplines. Critical and analytic thinking skills make applied mathematics majors highly employable in government, the private sector, and education.

In addition to their core mathematics coursework, students complete the actuarial track, which prepares students to work towards careers as actuaries in insurance, financial, and government careers; business mathematics.

Outcomes

Upon completion of the Bachelor of Science in Applied Mathematics, graduates will be able to:

1. Solve problems individually and collaboratively using mathematical techniques.
2. Support and justify results using mathematical reasoning, logic, and proof.
3. Construct, analyze, and interpret mathematical and statistical models.
4. Use technology to investigate and solve mathematical problems.
5. Communicate mathematics clearly in both written and oral formats.
6. Exhibit behaviors consistent with the professional and ethical standards of the discipline.

Policies

Students must earn a minimum GPA of 2.00 in the major. The lowest acceptable grade is a "C" in all courses listed in the catalog under "Program Requirements" for the major, including both courses in the major and SEE courses required by the major. No student, regardless of major, will be permitted to take a science or math course* unless they earn a grade of "C" or better in all prerequisite courses.

A student must maintain a science and math GPA of 2.0 or better in each semester in order to remain in good standing within the major. Grades are reviewed each semester and students are notified in writing of their academic status in the major, as appropriate:

- **Probation:** The student who earns a science and math GPA less than 2.0 in one semester will be notified, in writing, by the Department Chair that they are on probation in the Fine School of the Sciences. Students who are on probation will be required to meet regularly with their Success Coach/Academic Advisor for at least one full semester after being put on probation.
- **Dismissal:** The student who earns a science and math GPA less than 2.0 for a second semester will be notified, in writing, by the Department Chair that they are dismissed from the applied mathematics, biochemistry, biology, biomedical engineering, chemistry, or environmental science major.

** Science and mathematics courses are defined as courses with the designation: BIO, BIOCH, BME, CHEM, ENV, FSCI, MATH, PHYS, or SCI.*

Requirements

The courses listed below are required for completion of the bachelor's degree in applied mathematics. Students must also complete the requirements for the Stevenson Educational Experience (SEE). Specific pre- and co-requisites for each course are listed in the course descriptions.

Major Requirements:

MATH 220	Calculus I	4 credits
MATH 221	Calculus II	4 credits
MATH 222	Calculus III	4 credits
MATH 312	Mathematical Statistics I	3 credits
MATH 313	Mathematical Statistics II	3 credits
MATH 326	Linear Algebra	3 credits
MATH 418	Mathematical Modeling	3 credits
MATH 425	Scientific Computer Programming	3 credits
MATH 470	Capstone Internship	3 credits
MATH 475	Capstone Seminar	3 credits
	3 MATH electives	

Complete the requirements for the Actuarial Track.

Actuarial Track:

All major requirements and the following electives:

ACC 140	Financial Accounting	3 credits
ACC 141	Managerial Accounting	3 credits
EC 201	Principles of Macroeconomics	3 credits
EC 202	Principles of Microeconomics	3 credits
FIN 300	Principles of Finance	3 credits
MATH 342	Time Series Analysis	3 credits
MATH 420	Actuarial Mathematics	3 credits

Applied Mathematics Courses

Applied Math Courses added to Stevenson University Online (SUO) catalog:

- MATH 147 Precalculus
- MATH 220 Calculus I
- MATH 221 Calculus II
- MATH 222 Calculus III
- MATH 312 Mathematical Statistics I
- MATH 313 Mathematical Statistics II
- MATH 342 Time Series Analysis

- MATH 345 Actuarial Exam Review
- MATH 420 Actuarial Mathematics
- MATH 425 Scientific Computer Programming

Medical Laboratory Science-MLT to MLS Option

Beverly K. Fine School of the Sciences

Program Coordinator: Lara Biagiotti, M.S. MLS(ASCP)^{CM}

Description

Stevenson University offers the Medical Laboratory Technician (MLT) to Medical Laboratory Scientist (MLS) option for ASCP board-certified laboratory professionals interested in obtaining a bachelor's degree in Medical Laboratory Science (MLS). The curriculum is offered in 8-week sessions and is designed to enable online, part-time learners to complete the baccalaureate degree in MLS while taking one course at a time, or as full-time students taking four courses each semester.

The MLT to MLS option is a concentrated program designed for board-certified medical laboratory professionals currently employed in a full-service clinical laboratory, which allows the fulfillment of the program's clinical placement requirements. This program option is concentrated and designed for the highly motivated, self-directed Medical Laboratory Technician (MLT) who is able to participate in independent learning activities. MLTs who hold ASCP certification but are not employed in a full-service clinical laboratory will be required to complete clinical practicum courses (MLS 431, MLS 432, MLS 433 and MLS 434). The Stevenson University Medical Laboratory Science program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

Qualified MLTs must successfully complete a total of 120 credits, of which 30 credits must be taken at Stevenson University. MLTs may transfer prerequisite and college core courses, but the MLT to MLS major requirements (30 credits) must be completed at Stevenson University. Students who take courses at other higher education institutions are required to submit official transcripts at the completion of their courses in order to obtain credit for these courses.

Stevenson University will award 12 upper-division Medical Laboratory Science credits for the practicum courses (MLS 431, MLS 432, MLS 433, and MLS 434) to ASCP board-certified Medical Laboratory Technicians who are actively employed in a full-service clinical laboratory.

The MLT to MLS Option at Stevenson University partners with several community colleges across the state, and more partnerships are being developed. Please check the website for updates. In order to increase MLTs' accessibility to baccalaureate education, partnerships are in place with the following colleges:

• Anne Arundel Community College
• College of Southern Maryland
• Community College of Baltimore County

Transfer guides allow Medical Laboratory Technicians to complete up to 70 credits at the community college.

Prior to enrolling in the MLT to MLS Option, the student will be required to:

• Complete the online application

• Submit an official transcript demonstrating successful completion of an Associate Degree in Medical Laboratory Technology (MLT)

• Submit official transcripts from every institution attended

• Submit official primary source verification of active MLT(ASCP) or MLT(ASCPi) Certification, including certification number and expiration date. This request can be made on the ASCP website: https://www.ascp.org/content/board-of-certification/verify-credentials/#how-to-verify. The verification should be emailed directly to the SUO Enrollment Counselor (select "Sending to a Third Party by Email" and enter the Enrollment Counselor's email address),

• Eligibility to waive clinical practicum courses requires a signed attestation from the student with signatures from the laboratory managers from each discipline area of the clinical laboratory in which they are working.

Students must complete program requirements, 30 institutional credits and 120 credits to earn the Bachelor of Science in Medical Laboratory Science. Stevenson University will accept a maximum of 70 transfer credits from a regionally-accredited community college and 90 credits from a regionally-accredited four-year institution. Please contact an enrollment counselor for further details.

The medical laboratory science program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences. (NAACLS); 5600 North River Road, Suite 720, Rosemont, IL 60018-5119; 773-714-8880, naacls.org.

Graduates of the medical laboratory science program earn a Bachelor of Science degree and are eligible to take the national certification examination for medical laboratory scientists offered by the American Society for Clinical Pathology Board of Certification (ASCP-BOC).

Outcomes

Upon completion of the Bachelor of Science degree, graduates will be able to:

1. Demonstrate proficiency in performing the full range of clinical laboratory tests in the contemporary clinical laboratory.
2. Evaluate test systems and diagnostic algorithms in terms of diagnostic value, compliance outcomes, and cost-effectiveness.
3. Evaluate the results of laboratory analyses for accuracy and validity, and correlate laboratory data to disease processes.
4. Apply the principles and practices of quality assurance/quality improvement as applied to the pre-analytical, analytical, and post- analytical components of laboratory services.
5. Exhibit the ethical and professional behaviors required within the healthcare delivery system.
6. Communicate effectively orally, in writing, and through laboratory information systems in order to consult with members of the healthcare team, to provide patient education and customer service, and to interact with external parties.
7. Use research design/practice skills to evaluate published studies and investigate clinical laboratory issues/problems.
8. Exhibit an understanding of the concepts and principles of laboratory management such as human resource management, finance, operations, regulatory compliance, performance improvement, critical pathways and clinical decision-making.
9. Demonstrate understanding of education techniques and terminology to train/educate users and providers of laboratory services.
10. Seek national certification as a Medical Laboratory Scientist and pursue employment within this field or a related field or continue to post-graduate education.

Policies

1. The lowest acceptable grade is a "C" in all program requirements.

2. No student, regardless of major, will be permitted to take a science, math, or MLS course unless they earn a grade of "C" or better in all prerequisite courses.

3. Students must earn a minimum cumulative GPA of 2.8 to be admitted into the Medical Laboratory Science program. Once admitted to the MLT to MLS program, students must maintain a minimum cumulative GPA of 2.8 the major to remain in good standing.

4. Probation: The student who earns a cumulative GPA of less than 2.8 will be notified, in writing, by the Program Coordinator that they are on probation in the Medical Laboratory Science program.

5. Dismissal: If the student's cumulative GPA remains less than 2.8 for two semesters (consecutive or not), the student will be notified, in writing, by the Program Coordinator that they have been dismissed from the Medical Laboratory Science program. Students dismissed from the program are not eligible for re-admission.

Medical Requirements

Students who are not currently employed in a full-time capacity as an MLT will require clinical placement in a practicum experience at a full-service clinical laboratory facility to fulfill the clinical requirements of the MLT to MLS program.

Students enrolled in the program who must complete the clinical practicum courses will be required to provide proof of vaccination and/or proof of immunity to the following:

Measles, Mumps, and Rubella (MMR), Hepatitis B (HBV),Tdap and COVID-19. In addition, documentation will berequired of the following:

1. Documentation of personal medical insurance.
2. Documentation of a negative tuberculosis screening test (Quantiferon, PPD or chest x-ray)
3. Seasonal influenza vaccine
4. Background Check and Drug Screen

It is the student's responsibility to ensure all medical requirements are met prior to beginning any clinical experiences. Failure to provide acceptable documentation of medical requirements may result in the student being ineligible to participate in clinical practicum courses.

Program Completion

Upon satisfactory completion of the required program of study, the student will be awarded a Bachelor of Science in Medical Laboratory Science. The granting of the degree is not contingent upon passing any external certification examination.

National Certification Examination

Program graduates are eligible to take the national certification examination for Medical Laboratory Scientistsoffered by the American Society for Clinical Pathology Board of Certification (ASCP-BOC).

As stated in the University's non-discrimination policy,the University does not discriminate on the basis of health or disability.

Stevenson is committed to providing reasonable accommodations to meet the needs of students with documented disabilities without fundamentally altering essential components of the program. Requests for accommodations should be initiated with Accessibility and Disability Services in the Center for Student Success. Disability Services will engage in the interactive process with the applicant/student and consult with the appropriate medical laboratory science program faculty members as necessary to determine accommodations on an individualized case-by-case basis. To be considered for an accommodation, applicants and students will be required to submit documentation of their disability that meets the guidelines established by Disability Services.

Requirements

The courses listed below are required for completion of the bachelor's degree in medical laboratory science. Students must also complete the requirements for the Stevenson Educational Experience (SEE). Specific pre- and co-requisites for each course are listed in the course descriptions.

Major Requirements

ENG 152	College Writing II	3 credits
GEN 200	Writing and Research for the Adult Learner	3 credits
MLS 335	Clinical Laboratory Management	3 credits
MLS 338	Molecular and Immunologic Diagnostics	3 credits
MLS 405	Transfusion Medicine	4 credits
MLS 410	Hematology II	3 credits
MLS 420	Clinical Microbiology II	4 credits
MLS 425	Clinical Chemistry II	3 credits
MLS 430	Professional Research and Writing	4 credits

Major Requirements - 2nd Group

The following major requirements may be fulfilled by the successful completion of the Associate degree in Medical Laboratory Technology with an approved program transfer agreement or may be completed at another accredited college or university and transferred to Stevenson University. Students must submit official transcripts upon the completion of the course with a grade of "C" or higher for credit to be awarded.

BIO 112	Principles of General Biology	3 credits
	or	
BIO 113	General Biology I: Cell Biology and Genetics	3 credits
BIO 113L	General Biology I Laboratory: Cell Biology and Genetics	1 credit
BIO 203	Microbiology	3 credits
BIO 203L	Microbiology-Laboratory	1 credit
BIO 217	Principles of Biochemistry	3 credits
BIO 222	Human Anatomy	4 credits
BIO 230	Genetics	3 credits
BIO 230L	Genetics-Laboratory	1 credit
BIO 322	Human Physiology	3 credits
BIO 322L	Human Physiology-Laboratory	1 credit
CHEM 114	General Chemistry I with Problem Solving	3 credits

or

CHEM 115	General Chemistry I	3 credits
CHEM 115L	General Chemistry I Laboratory	1 credit
CHEM 116	General Chemistry II	3 credits
CHEM 116L	General Chemistry II Laboratory	1 credit
MATH 136	Introduction to Statistics	4 credits
MLS 210	Principles of Laboratory Science	3 credits
MLS 310	Hematology I	3 credits
MLS 310L	Hematology I Laboratory	1 credit
MLS 311	Communication and Cultural Competence in Health Care or approved SEE Communication Intensive course	3 credits
MLS 315	Clinical Mycology, Parasitology and Virology	2 credits
MLS 320	Urinalysis and Body Fluids	2 credits
MLS 320L	Urinalysis and Body Fluids Laboratory	1 credit
MLS 325L	Clinical Chemistry I Laboratory	1 credit
MLS 330	Clinical Microbiology I	3 credits
MLS 330L	Clinical Microbiology I Laboratory	1 credit

Major Requirements - 3rd Group

Students who hold active MLT(ASCP) or MLT(ASCP) certification and are employed in a full-service clinical laboratory may fulfill the following program requirements:

MLS 431	Clinical Chemistry Practicum	3 credits
MLS 432	Clinical Hematology Practicum	3 credits
MLS 433	Clinical Microbiology Practicum	3 credits
MLS 434	Clinical Immunohematology Practicum	3 credits