COLLEGE OF SCIENCE AND MATHEMATICS

Mission
The College of Science and Mathematics is committed to helping students excel academically and achieve productive careers through programs in academics, research and community service. The College provides degrees in biology, chemistry, computer science, marine biology, marine and environmental sciences, mathematics, physics and process technology. Opportunities leading to degrees in engineering and medicine at affiliated universities augment our degree offerings. College faculty are committed to lifelong learning and scientific research, academic and pedagogical advancement, and outreach to the local community through service and enhanced opportunities.

Master of Arts in Mathematics for Secondary Teachers

The Master of Arts degree in mathematics provides to teachers of mathematics at the secondary level, or to prospective teachers with an undergraduate degree in mathematics, an opportunity to deepen and broaden their knowledge of mathematics and relate their study of mathematics to pedagogical issues and methods specifically concerned with secondary mathematics learning.

The program is open to persons with a bachelor's degree in mathematics. Persons with a degree in a related field may also apply. Undergraduate transcripts must be submitted upon application to the program. Applicants with an undergraduate major in mathematics should have at least a 2.5 GPA. Applicants who did not major in mathematics must have a baccalaureate degree and a minimum of two semesters of calculus at university level and at least two other mathematics courses at the level of calculus or beyond with a minimum 2.5 average and a minimum of 2.5 in mathematics courses. Applicants who do not satisfy the requirements and other interested inquirers will be counseled regarding necessary prerequisites and assisted in finding ways to satisfy these requirements for admission into the program.

A minimum of 36 credits, including a major paper based on classroom "action research," are required for satisfactory completion of the program. The program will be offered in cohorts, with a new cohort beginning approximately every three years. If a student fails to satisfactorily complete the requirements for graduation with his or her cohort, she or he will be able to complete the missing requirements with the next cohort

Core Requirements		Credits
MAT 501	Advanced Geometry for Mathematics Teachers	3
MAT 521	Mathematics Topics for Secondary Schools I	3
MAT 522	Mathematics Topics for Secondary Schools II	3
MAT 544	Probability for Mathematics Teachers	3
MAT 551	Discrete Dynamical Systems and Mathematical Modeling I	3
MAT 557	Action Research in the Mathematics Classroom with Required Major Paper	1
MAT 561	Abstract Algebra for Mathematics Teachers I	3
MAT 567	Technology, Manipulatives, and Life Experiences for Mathematics Learning	1
MAT 586	History & Philosophy of Mathematics	3
MAT 591	Seminar: Teaching Secondary Mathematics I	2
MAT 592	Seminar: Teaching Secondary Mathematics II	2
EDU 500	Basic Research Techniques	3

Electives		Credits
MAT 511	Learning Theory for Mathematics Teachers	2
MAT 541	Real Analysis for Mathematics Teachers	3
MAT 552	Discrete Dynamical Systems and Mathematical Modeling II	2
MAT 562	Abstract Algebra for Mathematics Teachers II	3
MAT 565	Special Project in Mathematics or Mathematics Education	1-3
EDU 501	Tests and Measurements	3
EDU 520	Characteristics of Exceptional Children	3

Master of Marine and Environmental Sciences

Description
The Master of Marine and Environmental Science (MMES) degree provides students with the training and skills necessary for planning, conducting, and evaluating research in marine and environmental science. Additionally, students explore how to utilize research to manage natural resources, with a particular focus on the issues and challenges related to natural resource management in the Caribbean region. The program draws upon the expertise of faculty within several units of UVI, including the Center for Marine and Environmental Studies and the College of Science and Mathematics. Further, it is a bridge between academia and natural resource management sectors within the US Virgin Islands, the greater Caribbean, and beyond.

The program structure allows students to become conversant in the language of both research and resource management, and then to focus on their area of particular interest. Emphasis is placed on experiential learning with internships and research assistantships. A limited number of teaching assistantships are also available. Graduates of the program are prepared for a wide array of careers in academic, government, non-profit, and private sectors.

Admission Criteria
In addition to meeting the core requirements (see *mmes.uvi.edu*), it is highly recommended that applicants seeking admission to the MMES program would have completed the following coursework within the past ten (10) years:

1. Three (3) semesters of some combination of biology, ecology and environmental science, including at least one semester of general biology

2. One (1) semester of calculus and one (1) additional semester of calculus or a course in the area of applied mathematics, biostatistics, statistics, GIS and Quantitative Research Methods

3. Additional suggested coursework recommended in economics and social sciences, as well as upper level biology, chemistry, or physics.

Overview
Students complete a minimum of 36 graduate credit hours to earn the MMES degree. The MMES program has four requirements:

1. Core courses, (20 credits), which are required of all first-year students
2. A comprehensive examination
3. A thesis (~10 credits)
4. Elective courses (minimum of 6 credits)

Core Requirements		Credits
MES 501	Physical and Ecological Processes Along a Land-Sea Gradient I	3
MES 502	Physical and Ecological Processes Along a Land-Sea Gradient II	3
MES 503	Research Methodologies and Tools I	3
MES 504	Research Methodologies and Tools II	3
MES 505	Natural Resource Management I	3
MES 506	Natural Resource Management II	3
MES 507	Professional Development I	1
MES 508	Professional Development II	1

Capstone Project
During the second semester, students work as a team to apply concepts learned in the fall to an environmental problem or ecological question with relevance in the territory. Students develop a research protocol, collect data, and share their findings in a management plan or scientific report. The project's theme guides all core courses in the spring.

Thesis
All students submit a written thesis based on an independent research project, with oral thesis defense before the student's academic advising committee and presentation in a public seminar. The thesis requires multiple semesters of commitment from the student, as the primary goal of the program is to train students who can design and implement research projects, including collecting, analyzing, and interpreting data, and who can use newfound knowledge to address environmental and natural resource management challenges.

The student is expected to begin planning the thesis, under the guidance of his/her major advisor, during the first semester of enrollment in the MMES program. The student will be guided in conducting a literature review and writing a thesis proposal in Professional Development I and II seminars. The final literature review and thesis proposal will be reviewed by the student's major advisor and other committee members. Research will normally be conducted during the second year of enrollment, but other arrangements are possible with approval of the student's committee and the MMES Director.

In addition to core courses, students take elective courses after the first year of study. Students must take 3-6 credits of electives (usually 2 courses). The electives listed below are currently offered.

Electives (at least 6 credits)		Credits
MES 511	Graduate Research Diving	2
MES 524	Marine Ecology	3
MES 530	Coral Reef Biology	4
MES 549	Aquatic Plant Biology	4
MES 550	Terrestrial Plant Biology	4
MES 552	Plant Physiology	4
MES 565	Selected Topics in Marine and Environmental Science	1-4
MES 567	Pedagogy and Mentoring	1
MES 570	Evolution	3
MES 595	Independent Study	1-4
MES 596	Internship	1-4

Note that not all of the courses are offered every year. (See course descriptions.) If a course is not being offered, or if a student is interested in a topic for which a course does not currently exist, MES 595 Independent Study may be arranged in the area of interest. In such a case, students should contact their thesis advisor and the MMES director.

Definition of "adequate progress" within the program

To make "adequate progress" within MMES program a student will have to complete the following tasks:

1. Successfully complete core courses (20 credits) with a grade point average of 3.0 or higher and no more than one C in the program. Lower grades will result in academic probation or dismissal as described in the graduate bulletin.

2. Successfully complete at least one (1) course (elective or thesis) every semester until 36 credits are completed.

3. After 36 credits are completed, students continuing work on their thesis will register for one (1) thesis credit each semester until they graduate.

4. Provide his/her major advisor and the Director of Graduate Programs with a written annual update of progress, beginning in April of the second year, and annually by the end of April thereafter. The student's major advisor and Director of Graduate Programs will evaluate the student's update of progress every year; if they agree that the student is making adequate progress towards the degree, s/he will be allowed to remain in the program for one additional year, until the maximum five (5) year limit to completion of degree allowed by UVI is reached.