Bachelor of **A**rts **D**egree

SCIENCE AND MATHEMATICS DIVISION

In the Science and Mathematics Division, the University offers courses of study in astronomy, biology, chemistry, computer science, marine biology, and mathematics, with major fields of specialization in biology, chemistry, marine biology and mathematics. The Division also offers pre-engineering and pre-medical technology programs.

Mathematics is the essential tool for all students of natural, physical and applied sciences. In addition, certain areas in mathematics, such as statistics, probability, linear algebra and calculus, are indispensable for certain advanced programs in the social sciences. The students' readiness to begin the study of mathematics at the college level will determine whether they are able to complete their undergraduate degrees majoring in chemistry or mathematics in the normal period of four years. The student who has mastered mathematics through at least high school trigonometry and second-year high school algebra should be able to maintain the pace of a college program in science or mathematics. Four years of high school mathematics are recommended. In addition, familiarity with the language and basic concepts of the sciences can be gained through high school courses in biology and chemistry.

Students planning to attend a graduate school of medicine, dentistry or veterinary medicine normally will major in either chemistry or biology as an undergraduate. Students should consult with their advisors concerning courses which may be required for graduate study in their fields of interest. Biomedical research training opportunities are available for interested students to work in the laboratory of faculty mentors.

The University of the Virgin Islands is one of the few institutions in the United States offering an undergraduate major in marine biology. As the program develops, specialized field courses in chemical and physical oceanography, marine geology and marine instrumentation will be added. It is anticipated that the growing recognition for marine technicians will result in expanded career opportunities for those who complete the undergraduate program. Students in this program also will be prepared for graduate work.

Preparation in such fields as architecture, pharmacy, engineering and forestry may often be completed within the four years of a normal baccalaureate program with transfer from the University of the Virgin Islands after the first year or two of undergraduate study. However, many engineering programs now require a minimum of five years of study for a bachelor's degree.

The bachelor's degree, together with appropriate preparation in teacher education, is the basic qualification for those intending to teach science and mathematics at the secondary level.

The following tables list the required and recommended courses in the Science and Mathematics Division:

Biology Major

The requirements for a Bachelor of Arts Degree in Biology consist of the following Biology and related courses plus a study plan written by each candidate and his or her program advisor. Study plan guidelines and procedures will be published by the Division of Science and Mathematics from time to time. The study plan must be approved by the faculty of the Biology Program and will be submitted to the Enrollment Services Office. Course numbering reflects the year by which courses should be completed. The study plan must include at least one plant-based^ and one animal-based* course. Any change in the study plan must be approved by the advisor and the program prior to course registration.

In addition to the general education requirements (see pp. 83-84), the following courses are required:

A. Required courses in Freshman Studies (required for anyone admitted into the program with fewer than 24 credits):		**Credits**
SCI 100	The Natural World: The Caribbean	3
SSC 100	An Introduction to the Social Sciences: A Caribbean Focus	3
FDS 100	Freshman Development Seminar	1

B. Required courses in Biology (24 credit hours):		**Credits**
BIO 141-142	General Biology I-II	4-4
BIO 223	Ecology	4
BIO 245	Genetics	4
BIO 360	Cell and Molecular Biology I	4
BIO 397-398	Junior Science Seminar I-II	1-1
BIO 497, 498	Senior Science Seminar I, II	1,1

C. Required courses in related fields (22-24 credit hours):		**Credits**
CHE 151-152	General Chemistry I-II	5-5
MAT 241	Introduction to Calculus and Analytical Geometry I	4
or		
MAT 235	Introductory Statistics with Applications	4
PHY 211-212	Introduction to Physics I-II	4-4
or		
PHY 241-242	General Physics I-II	5-5
or		
PHY 241-212	General Physics I - Introduction to Physics II	5-4

D. Science electives:		**Credits**

An additional 18 credit hours minimum are required from the following:

BIO 220*	Marine Invertebrate Zoology	4
BIO 224	Population Biology	4

BIO 295	Responsible Conduct in Research	1
BIO 339*	Vertebrate Structure	5
BIO 342*	Animal Physiology	4
BIO 349^	Aquatic Plant Biology	4
BIO 350^	Terrestrial Plant Biology	4
BIO 352^	Plant Physiology	4
BIO 353	Developmental Biology	4
BIO 355-356	Biology of Microorganisms I-II	4-4
BIO 370	Evolution	3
BIO 430	Coral Reef Biology	4
BIO 460	Cell and Molecular Biology II	4
BIO 465-466	Selected Topics in Biology**	4
BIO 495	Directed Independent Research in Biology (maximum 6 credits)	1 to 4
BIO 496	Internship/Field Studies (maximum 4 credits)	1 to 4

Any MBI or MSC course
Any 200, 300 or 400 level Chemistry, Math or Physics course
SCI 100 (if taken as a freshman), The Natural World: The Caribbean

**Animal-based course*
***Depending on content, a Selected Topics in Biology may count as a plant- or animal-based course*
^Plant-based course

Chemistry Major

In addition to the general education requirements (see pp. 83-84), the following courses are required:

A. Required courses in Freshman Studies (required for anyone admitted into the program with fewer than 24 credits):

		Credits
SCI 100	The Natural World: The Caribbean	3
SSC 100	An Introduction to the Social Sciences: A Caribbean Focus	3
FDS 100	Freshman Development Seminar	1

B. Required courses in Chemistry:

		Credits
CHE 151-152	General Chemistry I-II	5-5
CHE 251	Quantitative Analysis	4
CHE 252	Instrumental Analysis	4
CHE 253-254	Organic Chemistry I-II	5-5
CHE 341-342	Physical Chemistry I-I	4-4
CHE 397, 398	Junior Science Seminar I, II	1/2,1/2
CHE 432	Inorganic Chemistry	4
CHE 497, 498	Senior Science Seminar I, II	1,1

C. The following courses in related fields are required:

		Credits
MAT 241-242	Introduction to Calculus and Analytical Geometry I-II	4-4
MAT 341-342	Intermediate Calculus I-II	3-3
PHY 241-242	General Physics I-II	5-5

D. The following courses are strongly recommended:

		Credits
CHE 348	Biochemistry	4
CHE 465, 466	Selected Topics	3 to 4
CHE 495	Directed Independent Research in Chemistry	1 to 4
CHE 496	Internship/Field Studies	1 to 4
MAT 441-442	Advanced Calculus I-II	3-3

Marine Biology Major

The requirements for a Bachelor of Arts Degree in Marine Biology consist of the following Biology, Marine Biology and related courses plus a study plan written by each candidate and his or her program advisor. Study plan guidelines and procedures will be published by the Division of Science and Mathematics from time to time. The study plan must be approved by the faculty of the Biology Program and will be submitted to the Enrollment Services Office. Course numbering reflects the year by which courses should be completed. Any change in the study plan must be approved by the advisor and the program prior to course registration.

In addition to the general education requirements (see pp. 83-84), the following courses are required:

A. Required courses in Freshman Studies (required for anyone admitted into the program with fewer than 24 credits):

		Credits
SCI 100	The Natural World: The Caribbean	3
SSC 100	An Introduction to the Social Sciences: A Caribbean Focus	3
FDS 100	Freshman Development Seminar	1

B. Required Courses in Biology and Marine Biology (45 credit hours):

		Credits
BIO 141-142	General Biology I-II	4-4
MBI 220	Marine Invertebrate Zoology	5
MBI 222	Ichthyology	4
BIO 223	Ecology	4
MSC 239	Oceanography	4
BIO 245	Genetics	4
BIO 349	Aquatic Plant Biology	4
BIO 360	Cell and Molecular Biology I	4
BIO 397-398	Junior Science Seminar	1-1
MBI 424	Marine Ecology	4
BIO 497, 498	Senior Science Seminar	1, 1