



# Bachelor of Science Degree

To qualify for a bachelor of science degree, students must successfully complete a minimum of 120 credits (exclusive of physical education) including the general education requirements, the required courses in the major field, and such additional courses as they may select with the assistance of their faculty advisors to meet the requirements of the major.

## General Education Requirements

The General Education requirements for graduation in the bachelor of science degree programs are listed below. Specific guidance about the courses that are available to meet General Education requirements will be provided to students in advance of registration. Students are required to meet with their advisors in the selection of their courses.

### I. GENERAL EDUCATION COURSES Credits

**A. FRESHMAN DEVELOPMENT SEMINAR (FDS)\* 0-1**

**B. HUMANITIES 18**

Courses fulfilling the Humanities electives include:  
Humanities, Communication, English, French, Spanish, Music, Theatre, Philosophy, Art.

**C. MATHEMATICS AND SCIENCE 13-16**

SCI 100*	The Natural World: The Caribbean	3
MAT 140	College Algebra with Applications	4
or MAT 143**	Precalculus Algebra	

**D. SOCIAL SCIENCES 9-12**

SSC 100\* An Introduction to the Social Sciences: A Caribbean Focus 3  
and

three other courses in the Social Sciences:  
Anthropology, Criminal Justice, Economics, Geography, History, Political Science, Psychology or Sociology.

*\*Requirement of the Freshman Year Program for all students matriculating into the University with fewer than 24 credits.*

*\*\*A student exempted from College Algebra with Applications or Precalculus Algebra by a qualifying examination must take one semester of a more advanced mathematics course.*

### II. SUMMARY Credits

Freshman Development Seminar	0-1
Humanities	18
Mathematics and Science	13-16
Social Sciences	9-12
<b>TOTAL</b>	<b>43-47</b>

# Bachelor of Science Degree

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## **III. OTHER REQUIREMENTS**

Students are required to take 0.5 credit hour in Physical Education for every semester they are full-time students up to the required two credit hours. PLS 200 may also be used to meet this requirement.

Also, students must earn at least 30 of the last 36 credits at the University of the Virgin Islands. This particular requirement may be waived by the Provost only in cases where the student must complete the final year(s) of studies in another institution recognized by the University of the Virgin Islands. Course work more than ten years old must be reviewed on a case-by-case basis to determine its appropriateness to the current University course requirements. Appeals should be directed to the Provost. In order to graduate, students must earn at least two times as many quality points as registered credits in all their courses as well as in the courses of their major.

Additionally, students must successfully pass the following examinations:

- 1. ENGLISH PROFICIENCY EXAMINATION (EPE)**
- 2. COMPUTER LITERACY EXAMINATION (CLE)**

Please review entry prerequisites for EPE and CLE on pp. 66-67.

## **Degree Majors and Programs – B.S. Degree**

Students enrolling in the bachelor of science degree programs at the University of the Virgin Islands presently may select as a major field of study one of the following:

### **SCHOOL OF BUSINESS**

**Maritime Management**

### **COLLEGE OF LIBERAL ARTS AND SOCIAL SCIENCES**

**Criminal Justice**  
**Psychology**

### **SCHOOL OF NURSING**

**Nursing**

### **COLLEGE OF SCIENCE AND MATHEMATICS**

**Computer Science**

The following majors are only offered on the St. Thomas Campus.

**Applied Mathematics**  
**Biology**  
**Chemistry**  
**Marine Biology**  
**Mathematics**

# Bachelor of Science Degree

## SCHOOL OF BUSINESS

### *Maritime Management Major*

The Bachelor of Science in Maritime Management is designed to provide expanded career opportunities in the maritime industry by opening doors to shore side management positions that require expertise in business. The business education in combination with expertise and hands on experience in the maritime industry will open doors for long term and sustainable opportunities within the maritime industry to include, ship management, port management, logistics management, brokering, and other maritime trade and sales positions. This degree will allow students to supplement their technical expertise with business acumen needed to participate in or lead a successful business in the maritime industry.

Students pursuing a BS in Maritime Management are required to earn a minimum grade of C in all required courses in Maritime Management with the prefixes ENT, BUS, ACC, IST, DSC, FIN, MGT and MKT.

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 humanities

		Credits
BUS 305	Business Communication	3
ENG 120	English Composition	3
ENG 201	Research and Applied Writing	3
Humanities electives		9

C. Required courses in mathematics and science

		Credits
MAT 140	College Algebra with Applications	4
or		
MAT143	Precalculus Algebra	4
and MAT 232	Calculus for Business and Social Sciences	4
Science electives		6

(Science elective may be any course under the prefix BIO, CHE, MSC, NSC, PHY, or SCL.)

D. Required courses in social sciences

Three courses in the social sciences: anthropology, criminal justice, economics, geography, history, political science, psychology or sociology.

E. Students must take a minimum of 34 technical credit hours from a maritime institute or academy.

F. Required courses in business:

		Credits
ACC 201	Financial Accounting	3
ACC 202	Management Accounting	3
BUS 351	Business Law	3
BUS 436	Business Strategy	3
DSC 325	Statistics for Management Decisions	3
DSC 430	Production / Operations Management	3

# Bachelor of Science Degree

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Credits

ECO 222	Micro-economics	3
ENT 205	Innovation And Entrepreneurship	3
FIN 301	Fundamentals of Finance	3
IST 210	Business Information Systems	3
MKT 301	Principles of Marketing	3

G. Required courses in management:

Credits

MGT 301	Principles of Management	3
MGT 342	Human Resource Management	3
MGT 429	Organizational Behavior	3
MGT 436	International Business Management	3

# Bachelor of Science Degree

## COLLEGE OF LIBERAL ARTS AND SOCIAL SCIENCES

### *Criminal Justice Major*

The BS in Criminal Justice is an interdisciplinary program that is designed to prepare students for the many careers in criminal justice and law enforcement and lays the academic foundation for post graduate education and law school. This program covers the study of law enforcement and security procedures, courts and corrections, and criminal justice theory. This degree will teach students the functions of criminal justice organizations and law enforcement procedures. The BS degree differs from the BA because of its emphasis on the institutions of criminal justice, specifically the police, courts and corrections, forensic science, and crime scene investigations (CSI). Upon graduation, a student will have the knowledge necessary to begin a rewarding career in the field. This program is also designed to qualify those students who are already in the criminal justice and law enforcement fields for promotion to advanced positions. Students should seek advisement from the Criminal Justice advisor to plan their career path and select appropriate electives and substitutions where available in the paradigm.

#### **Admission to the Criminal Justice Major**

- Achieved a cumulative GPA of 2.33 or higher following the completion of 52 credits of which 30 credit hours must have been taken at UVI
- Earned a grade of C+ or better in CJU 110
- Complete an application that can be obtained from the Registrar's Office or program website and submit to the Chair of the Social Sciences Department

#### **Other Requirements**

Students pursuing an AAS, BA or BS in Criminal Justice are required to earn a minimum grade of C in all required criminal justice courses (CJU XXX), except for CJU 250. Criminal Justice Internship in which students must earn a minimum grade of B.

Students declaring this major must meet the following requirements before taking any CJU courses:

1. completion of WAC and RAC or received a passing grade on the placement exam(s) for entrance into ENG 120
2. completion of MAT 023 and MAT 024 or received a passing grade on the placement exam(s) for entrance into MAT 140, MAT 143 or MAT 153

- 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 the Humanities (which will also fulfill general education requirements):

Credits

COM 119	Interpersonal Communication and Leadership Skills	3
COM 120	Public Speaking	3
ENG 120	English Composition	3
ENG 201	Research and Applied Writing	3
PHI 200	Critical Thinking	3

# Bachelor of Science Degree

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		Credits
SPA 131-132	Functional Elementary Spanish I-II	4-4
SPA 231	Intermediate Spanish	4

C. Required courses in the Science and Mathematics (which will also fulfill general education requirements): Credits

MAT 140	College Algebra with Applications	4
or MAT 143	Precalculus Algebra (MAT 143 recommended)	4
		Credits
MAT 235	Introductory Statistics with Applications	4
BIO 141-142	General Biology I-II	4-4
CHE 151-152	General Chemistry I-II	5-5

D. Required physical education courses Credits

(May be met by Physical Education courses or Personal Life Skills course) 2

E. Required courses in the Social Sciences (which will also fulfill general education requirements): Credits

CJU 110	Introduction to Criminal Justice	3
CJU 205	Administration of Justice	3
CJU 207	Criminal Law	3
CJU 240	Constitutional Law	3
CJU 250	Criminal Justice Internship	3
CJU 325	Police Organization and Administration	3
CJU/POL321	Contemporary Correction	3
CJU 305	Criminal Investigation	3
<i>or</i>		
CJU 345	Forensic Science	4
CJU 401	Criminal Justice Research Methods and Analysis	4
CJU 432	Criminal Procedure and Evidence	3
HIS 341	Caribbean History	3
<i>or</i>		
HIS 342	History of the Virgin Islands	3
POL 120	Introduction to Political Science	3
POL 129	Introduction to Public Administration	3
PSY 120	General Psychology	3
<i>or</i>		
SOC 121	Introduction to Sociology	3
SOC 333/CJU 333	Criminology	3
SSC 327-328	Quantitative Research Methods in the Social Sciences	4-4
SSC 497-498	Social Sciences Senior Seminar I-II	1-1

F. Elective courses for the Criminal Justice major:

For the nine credits of electives students in the BS in Criminal Justice will choose a minimum of 6 credits at the three hundred level or above from among the following:

- Biology
- Chemistry
- Criminal Justice
- Economics
- Marine Biology

# Bachelor of Science Degree

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- Mathematics
- Political Science
- Psychology
- Physics
- Science

## **Psychology Major**

A Bachelor of Science degree with a major in Psychology is offered for preprofessional students who intend to pursue graduate studies. This degree program is challenging and should be attempted only by students with special talents in experimental psychology. Psychology BS degree students must successfully complete a minimum of 120 credits. Specific guidance about the courses that are available to meet General Education requirements and the selection of electives will be provided to students in advance of registration. Students are required to meet with their advisors in the selection of their courses.

The following courses, which include the general education courses, are required for the Bachelor of Science degree in Psychology.

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 the Humanities: Credits

COM 119	Interpersonal Communication and Leadership Skills	3
ENG 120	English Composition	3
ENG 201	Research and Applied Writing	3
ENG 300	Scientific Writing	3
Humanities Electives		6

C. Required courses in Science and Mathematics: Credits

MAT 143	Precalculus Algebra*	4
or MAT 241	Calculus	4
MAT 235	Introductory Statistics with Applications	4
BIO 110	Introduction to Research Methods	2
BIO 210	Research Methods I	2
BIO 295	Responsible Conduct in Research	1

*\*A student exempted from Precalculus Algebra by a qualifying examination must take advanced mathematics courses to meet the minimum 8 mathematics credit requirement.*

D. Required courses in the Social Sciences: Credits  
Social Science Electives (Anthropology, Criminal Justice, Economics, Geography, History, Political Science or Sociology) 9

**Total 40-47**

E. Required physical education courses: 2  
(May be met by Physical Education courses or Personal Life Skills course)

# Bachelor of Science Degree

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F. Required courses Psychology and Social Sciences: Credits

PSY 120	General Psychology	3
PSY 202	Life Span Development	3
PSY 203	Introduction to Personality	3
PSY 240	Biopsychology	4
PSY 304	Cognitive Psychology	3
PSY 312	Psychology of Learning	3
PSY 350	Drugs, Behavior and Society	3
PSY 340	Behavioral Neuroscience	3
PSY 348	Sensation and Perception	3
PSY 434	Abnormal Psychology	3
PSY 440	Applied Research Methods	3
PSY 496	Practicum in Psychology	3
SSC 327-328	Quantitative Research Methods in the Social Sciences	4-4
SSC 497-498	Social Sciences Senior Seminar	1-1

**Total** **47**

G. Psychology Electives (minimum of 18 credits of any other psychology course): Credits

**Total** **18**

H. Other Electives: Credits

Any other courses in Biology, Chemistry, Computer Science, Mathematics, or Physics **15**



# Bachelor of Science Degree

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## SCHOOL OF NURSING

### **Mission**

The School of Nursing, in a learner-focused and multi-cultural environment, prepares its graduates to meet the health needs of all people, with a focus on the U.S. Virgin Islands and the wider Caribbean. Faculty strive for excellence through rigorous academic standards, innovative teaching strategies, research and community service.

### **Accreditation**

The Bachelor of Science in Nursing degree in the School of Nursing is accredited by the Accreditation Commission for Education in Nursing, 3343 Peachtree Rd NE, Suite 850, Atlanta GA, 30326, (404) 975-5000; Fax (404) 975-5020.

### **Programs**

The School of Nursing has two tracks for completion of the Bachelor of Science Degree in Nursing (BSN): the generic program and a BSN completion program. 120 credits (at least four years) is required for completion of the BSN degree.

### **Generic BSN Program**

The generic BSN Program is designed to prepare the student to pass the National Council Licensure Examination for Registered Nurses (NCLEX-RN), a requirement for obtaining a license as a registered nurse. Prospective students should be aware that the Virgin Islands Board of Nurse Licensure will not grant permission to take the NCLEX-RN to anyone without a Social Security Number. While graduates may be able to test in another state, they will not be eligible for licensure in the U.S. Virgin Islands unless they have a Social Security number. In addition to successful completion of the NCLEX-RN Examination, licensure requirements vary so students should contact the Board of Nursing in the state or territory in which they plan to practice. Contact information can be retrieved at the National Council of State Boards of Nursing website (<http://www.ncsbn.org>).

Applicants intending to study nursing are expected to have completed a rigorous program of study in high school, including four years of English or the equivalent, two years of college preparatory mathematics, one year of biology and one year of general chemistry.

The BSN degree is a four year degree program requiring at least 120 credits, including 59 credits of general education and 61 credits in nursing. At least three semesters of full-time study are required prior to entry into the nursing program. Students who need pre-college classes, such as ENG 100/101, may need more than three semesters to complete all required pre-nursing courses. Nursing coursework begins in the spring semester of the sophomore year.

### **BSN Completion Program**

The BSN Completion Program is cohort-driven and a minimum of 10 students is necessary to begin a new cohort. The Program is open to graduates of NCLEX-RN preparatory nursing schools (associate degree; diploma) who want to complete the Bachelor of Science Degree in Nursing. There are three categories of BSN Completion applicants: graduates of accredited nursing schools in the U.S. or territories, graduates of non-accredited nursing schools in the U.S. or territories, and graduates of foreign nursing schools. Requirements differ so applicants are urged to review information carefully and to speak to a nursing advisor before applying.

BSN Completion students must take at least 24 earned credits in nursing in addition to general education courses. The nursing coursework begins in the spring semester and can be completed in three (or more) semesters.

# Bachelor of Science Degree

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## **Admission to the BSN Program**

In order to qualify for admission to the BSN Program, all applicants must be accepted to UVI and have a cumulative GPA of 2.5.

**Generic applicants** must have successfully completed, or be enrolled in:

- freshman year courses, including ENG 100/101, MAT 023/024, FDS 100, SCI 100 and SSC 100 (transfer applicants with >24 credits are exempt);
- general education courses, including HSC 100, ENG 120, ENG 201, MAT 140, MAT 235, PSY 120, PSY 202 and COM 119;
- BIO 151/152 and BIO 240 with grades of “C” or better (online courses are not accepted);
- Computer Literacy Examination (unless exempt);
- Test of Essential Academic Skills (TEAS) from Assessment Technologies Institute (second degree students are exempt) with a score of “basic” or better. The TEAS test is administered by UVICELL. Applicants from other locations can check [www.atitesting.com](http://www.atitesting.com) for information about testing in other locations.

Transfer applicants who have been enrolled in another nursing program and wish to transfer into the BSN program must contact the administrator of the previous institution and request that a letter be mailed directly to the Dean of the School of Nursing indicating their academic standing and eligibility for re-admission. In addition, an interview with the Admissions Committee is required.

**BSN Completion applicants** must either be licensed as a registered nurse (RN) or be within four years of completion of their generic nursing program.

**Graduates of foreign nursing schools** must have a current, unencumbered license in one of the United States or U.S. territories to qualify for admission. All RNs must submit proof of licensure.

**Unlicensed nurses who are accepted** must enroll in NUR 433: NCLEX Preparation and subsequently pass the licensure exam. Proof of licensure is required prior to the beginning of the next semester. Unlicensed nurses may not continue and must re-apply to the BSN Completion Program once licensed.

If an unlicensed BSN Completion applicant is nearing the end of NCLEX-RN eligibility in the U.S. Virgin Islands and there are not enough students to begin a new cohort, then the applicant is strongly advised to enroll in NUR 433: NCLEX Preparation or some other NCLEX preparation course.

**Applicants who are graduates of accredited U.S. nursing schools** will receive a maximum of 40 credits for HSC 100, PLS 200, NUR 104, NUR 208, NUR 308, NUR 318, NUR 319, NUR 321, NUR 417 and NUR 433. Credits will be held in escrow until successful completion of NUR 418: Community Health and then added to the student’s transcript.

**Applicants who are graduates of non-accredited nursing schools and graduates who are not eligible to take the NCLEX-RN exam due to length of time since graduation** must pass challenge exams offered by the National League for Nursing (NLN) as follows:

NACE II: Care of the Adult Client RN to BSN (HSC 100, PLS 200, NUR 208, NUR 308; NUR 319; NUR 417)

NACE II: Childbearing RN to BSN and Care of the Child RN to BSN (NUR 321)

NACE II: Care of Client with a Mental disorder RN to BSN (NUR 318)

# Bachelor of Science Degree

Challenge exams are also available for BIO 151/152 (anatomy/physiology), BIO 240 (microbiology) and NUR 229 (pharmacology). Applicants will have two opportunities to take the challenge exams. Upon successful completion of challenge exams and payment of required fees, credits will be granted on the applicant's UVI transcript. A clinical challenge may also be required prior to acceptance into the BSN Completion Program.

**BSN Completion applicants** must have successfully completed, or be enrolled in:

- freshman year courses, including ENG 100/101, MAT 023/024, FDS 100, SCI 100 and SSC 100 (applicants with >24 credits are exempt);
- general education courses, including ENG 120, ENG 201, MAT 140, MAT 235, PSY 120, PSY 202 and COM 119;
- BIO 151/152 and BIO 240 with grades of "C" or better (online courses are not accepted);
- Computer Literacy Examination (unless exempt).

Drug Dosage Calculation competency is a requirement for all BSN Completion students. All applicants who are accepted will be given a comprehensive exam prior to the beginning of NUR 210 (Bridge to Professional Nursing) which must be passed with a grade of 90% or better. Study materials are posted on the School of Nursing website. Two opportunities to pass are permitted. Those scoring <90% on the exam are required to register for, and pass, NUR 104 (Drug Dosage Calculation).

## Application Process

Admission to the University is a prerequisite for admission into the nursing program but does not guarantee acceptance into the BSN Program. All prospective BSN students must submit a separate application packet to the School of Nursing by October 15th, either in person or by mail. Application forms may be downloaded from the School of Nursing website or may be requested from the School of Nursing.

Applications for the St. Thomas Campus should be addressed to:  
University of the Virgin Islands, School of Nursing  
#2 John Brewers Bay  
St. Thomas, U.S Virgin Islands, 00802-9990.

Applications to the Albert A. Sheen Campus should be addressed to:  
University of the Virgin Islands, School of Nursing  
RR1, Box 10,000;  
Kingshill, St. Croix  
U.S. Virgin Islands, 00859-9781.

The application packet should include:

- Completed application form
- Copy of letter of acceptance from UVI
- Official transcripts from all colleges/universities attended (not including UVI)
- Copy of transcript evaluation completed by the UVI Office of the Registrar (if applicable)

## Selection and Notification of Applicants

Admission to the generic BSN program is competitive and based on a point system. Enrollment is limited and applicants with the most points will be selected for admission. Points are awarded to applicants for grades in pre-requisite courses, performance on the TEAS test, current enrollment at UVI and a bachelor's degree in another field.

Admission to the BSN Completion Program is open to all nurses who meet the pre-requisites and complete the application process.

# Bachelor of Science Degree

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Applicants to the BSN Program will be notified of acceptance, or conditional acceptance, by November 15th. Required courses in progress at the time of application must be completed successfully in order to begin the program. All applicants who are accepted into the BSN Program will have to submit documentation that meets clinical agency requirements, including a criminal background check and drug screen, immunization record and certification in CPR for Healthcare Professionals.

## Progression Requirements for Generic and BSN Completion Students

In order to progress in the BSN Program, students must:

- Earn at least a “C” grade in all nursing courses, except for NUR 104 and NUR 433;
- Earn at least a grade of “A-” in NUR 104: Drug Dosage Calculation and NUR 433: NCLEX Preparation (BSN Completion students may be exempt from these courses);
- Score 90% or better by the third attempt on the Drug Dosage Calculation exam given each semester (if applicable);
- Maintain an overall GPA of “C” (2.0).

Within the School of Nursing, a “C” grade is defined as 75%. A student may only repeat one nursing course. Students who are granted an administrative withdrawal (AW) and are passing at the time of withdrawal are not considered to have failed and are permitted to re-enroll. Students who withdraw failing (“WF”) or fail a nursing course are permitted to re-enroll only one time during their tenure in the program. The semester before the failed course will be offered again, the student must register to ensure a place in that course. The second failure of a nursing course results in dismissal from the program.

## Returning Students

Students in good standing in the School of Nursing who have an interruption in their nursing education must meet the current admission, progression and graduation requirements and notify the Dean of the School of Nursing in writing of their desire to return by October 15 for the spring semester and by March 15 for the fall semester. Returning students are required to meet with their advisor and, if eligible, register during the advisement/registration period to communicate their intent to return to the School of Nursing. Failure to register in advance means that the student forfeits their opportunity to secure a place in the course(s).

## Nursing Major

The following courses, which include the general education courses, are required for the B.S.N. degree.

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 the Humanities:

		Credits
COM 119	Interpersonal Communication and Leadership Skills	3
ENG 120	English Composition	3
ENG 201	Research and Applied Writing	3
SPA 131-132	Functional Elementary Spanish I-II	4-4
or FRE 131-132	Functional Elementary French I-II	4-4
HUM 115	Introduction to Humanities	3

# Bachelor of Science Degree

## C. Required courses in Science and Mathematics: Credits

MAT 140	College Algebra with Applications	4
or MAT 143	Precalculus Algebra	4
MAT 235	Introductory Statistics with Applications	4
BIO 151-152	Human Anatomy and Physiology I-II	4-4
BIO 240	Microbiology	4

## D. Required courses in the Social Sciences: Credits

Social Science Elective		3
PSY 120	General Psychology	3
PSY 202	Life Span Development	3

## E. Other Required Courses Credits

PLS 200	Self Management: Wellness and Risk (satisfies PE requirement)	2
HSC 100	Medical Terminology	1

## F. Required courses in Nursing: Credits

NUR 208	Fundamentals of Nursing	6
NUR 209	Health Assessment	3
NUR 229	Pharmacology in Nursing	2
NUR 308	Adult Health Nursing I	6
NUR 311	Pathophysiology	3
NUR 318	Mental/Behavioral Health Nursing	3
NUR 319	Adult Health Nursing II	6
NUR 321	Maternal Child Nursing	6
NUR 322	Evidence-Based Practice	2
NUR 417	Adult Health Nursing III	6
NUR 418	Community Health Nursing	4
NUR 421	Nursing Leadership	3
NUR 422	Nursing Seminar	2
NUR 432	Senior Clinical Practicum	5
NUR 433	NCLEX Preparation	2

### Program of Study for BSN Completion

At least 120 credits are required for the BSN, including general education credits, earned nursing credits and credits granted to nurses for prior learning. A minimum of nine nursing courses (24 credits) are required for the BSN Completion Program. These courses can be completed in three or more semesters.

## Nursing courses required for BSN Completion Credits

NUR 209	Health Assessment	3
NUR 210	Bridge to Professional Nursing	2
NUR 229	Pharmacology	2
NUR 311	Pathophysiology	3
NUR 322	Evidence-Based Practice	2
NUR 418	Community Health	4
NUR 421	Nursing Leadership	3
NUR 422	Nursing Seminar	2
NUR 433	NCLEX Preparation (RNs are exempt)	2
NUR 434	RN Clinical Practicum	3

# Bachelor of Science Degree

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## COLLEGE OF SCIENCE AND MATHEMATICS

A bachelor of science degree with majors in biology, chemistry, computer science, marine biology or mathematics is offered for preprofessional students who intend to pursue graduate studies. A Bachelor of Science in Applied Mathematics is offered to students who complete the dual degree Engineering programs. These degree programs are challenging and should be attempted only by students with special talents in science.

The biology major provides a firm foundation in biology and cognate sciences while allowing students to specialize within a field of interest (e.g., zoology). The marine biology major requires that a broad base in the biological and physical sciences be acquired and applied in the study of marine environments. The course of study results in a level of preparation difficult to obtain elsewhere at the bachelor's level.

The chemistry program provides a strong background in chemistry with grounding in physics and mathematics. With the proper choice of electives the student can design a curriculum with sub-specialization in biology, marine biology, computer science, engineering, mathematics or physics. It is suitable for students wishing higher degrees in chemistry, biochemistry or related fields.

A computer science major is offered for students who plan on starting a professional career in computer science immediately after graduation or for students who intend to pursue graduate studies. The program provides a strong professional foundation in computer science, mathematics and science, and includes electives which can be selected to provide exposure to an application area in science or computer information systems. It is suitable for students seeking employment in the computing industry and for students seeking an understanding of how computers and their applications evolve.

The mathematics major requirements accommodate a wide variety of interests and career goals. The courses provide broad training in undergraduate mathematics, preparing majors for graduate study, for positions in government, industry and the teaching profession. While students must consult with their advisors in designing appropriate courses of study, three suggested tracks in the description of the major, as well as a concentration in computer science are offered. The concentration in computer science is recommended for those students interested in graduate study in applied mathematics (e.g. Numerical Analysis), as well as for those students interested in teaching.

The bachelor of science programs in biology, chemistry with physics or marine biology are good preparations for students interested in careers in the health sciences. Interested students should seek details of a cooperative program with Boston University School of Medicine, together with other cooperative programs which may be available, from the Dean of the College.

Prospective majors should consult their academic advisors and carefully evaluate the demands of these programs before deciding to pursue a B.S. degree. The approximately 20-credit difference in general education requirements between B.S. degrees and B.A. degrees is more than compensated by increased requirements in science and mathematics in the B.S. programs. Not only are more science and mathematics credits required for the B.S. degrees, but the additional required courses are at more advanced and challenging levels.

### ***Applied Mathematics Major (3-2 Engineering Program)***

The Bachelor of Science in Applied Mathematics is available only for students who complete the dual degree or 3-2 engineering program. Through this program, students

# Bachelor of Science Degree

spend approximately three years at the University of the Virgin Islands and two years at a participating institution. At the end of the program, the student receives a Bachelor of Science in Applied Mathematics from the University of the Virgin Islands, and a Bachelor of Science in his or her chosen field of engineering from the affiliated university. (A student may also opt to complete another existing UVI bachelors degree by completing all those requirements before enrolling at the affiliated university for the B.S. in engineering.) The University of the Virgin Islands has agreements with Columbia University and Washington University in St. Louis. The dual degree program offers a great deal of flexibility to students. Students follow a course of studies similar or identical to those taken by many of our science majors, while adding certain required courses. Many pre-medicine majors can also prepare for engineering by adding a few courses to their normal curriculum. A well-planned curriculum will open up many options to those students who begin in the dual degree engineering program. Interested students should consult with the engineering liaison officer early in their college career.

## **Applied Mathematics Major**

In addition to the general education requirements (see pp. 139-140), 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 Mathematics: Credits

MAT 241-242	Introductory Calculus I-II	4-4
MAT 261	Linear Algebra	4
MAT 341-342	Intermediate Calculus I-II	3-3
MAT 346	Differential Equations	4
MAT 397, 398*	Junior Mathematics Seminar	1/2, 1/2

\*SCI 497 may be taken in place of MAT 398.

C. Required courses in Related Fields: Credits

CHE 151-152	General Chemistry I-II	4-4
CHE 151L-152L	General Chemistry Lab I-II	1-1
PHY 241-242	General Physics	5-5
PHY 341	Modern Physics	3
CSC 117	Intro. To Programming I	4
ECO 221	Intro. To Macro-Economics	3

D. In addition to the required courses, the student is strongly recommended to take more courses in his/her chosen field of specialization:

<b>Field of Specialization</b>	<b>Suggested Courses</b>	<b>Credits</b>
Biomedical Engineering	BIO 141-142 Biology courses numbered above 200	4-4
Chemical Engineering	Chemistry courses numbered above 200	

# Bachelor of Science Degree

		Credits
Computer Engineering	MAT 223 (Discrete Mathematics)	3
	MAT 325 Numerical Methods	3
	CSC 118 Intro to Programming II	4
	CSC 242 Data Structures	4
	CSC course	
Mechanical Engineering	Physics courses numbered above 200	
Electrical Engineering	Physics courses numbered above 200	
Applied Mathematics	MAT 233 Discrete Mathematics	3
	MAT 325 Numerical Methods	4
	MAT 332 Mathematical Statistics	3
	MAT 352 Mathematical Modeling	3

## ***Biology Major***

The requirements for a Bachelor of Science 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 College 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<sup>^</sup> 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 fulfilling the General Education requirements for a Bachelor of Science degree, students must pass a Science Comprehensive Examination following completion of formal academic course work and prior to graduation.

In addition to the general education requirements (see pp. 139-140), 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/MBI 497, 498*	Senior Science Seminar I, II	1,1

### C. Required courses in related fields (36-38 credit hours):

		Credits
CHE 151-152	General Chemistry I-II	4-4
CHE 151L-152L	General Chemistry Lab I-II	1-1
CHE 253-254	Organic Chemistry I-II	4-4
CHE 253L-254L	Organic Chemistry Lab I-II	1-1
MAT 241-242	Introduction to Calculus and Analytical Geometry I-II	4-4



# Bachelor of Science Degree

		Credits
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, Technology and Mathematics (STEM) electives:

An additional 30 credit hours minimum are required from the following: Credits

BIO 210	Research Methods I	2
BIO 220**	Marine Invertebrate Zoology	5
BIO 224	Population Biology	4
BIO 295	Responsible Conduct in Research	1
BIO 310	Research Methods II	2
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	3
BIO 355-356	Biology of Microorganisms I-II	4-4
BIO 361	Bioinformatics	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	3, 4
BIO 495	Directed Independent Research in Biology (maximum 6 credits)	1-4
BIO 496	Internship/Field Studies (maximum 4 credits)	1-4

Any MBI or MSC course

Any 200, 300 or 400 level Chemistry, Math or Physics course except MAT 232

Any ENV course

SCI 100 (if taken as a freshman), The Natural World: The Caribbean

SCI 220 Introduction to Geographic Information System

Any CSC course except CSC 111 or CSC 119

STE 110 and/or STE 112

*\*SCI 497 may be taken in place of either BIO 497 or 498*

*\*\*Animal-based course.*

*^Plant-based course.*

*\*\*\*Depending on content, a Selected Topics in Biology may count as a plant- or animal-based course.*

## Concentration in Computational Biology

Students earning the B.S. Biology Major may or may not also elect to complete a Concentration in Computational Biology. This interdisciplinary concentration will prepare students to participate in new frontiers of research in which gigantic volumes of data are analyzed to seek answers to questions in molecular, medical, and environmental biology. The requirements to complete the Concentration in Computational Biology include all of the requirements for the B.S. Biology major plus the following:

Students must complete the following courses in partial fulfillment of the Section D science electives requirement:

# Bachelor of Science Degree

		Credits
CSC 117-118	Introduction to Programming I-II	4-4
CSC 242	Data Structures	4
MAT 261	Linear Algebra	4
MAT 352	Mathematical Modeling	3
BIO/CSC/MAT 361	Bioinformatics	4

## **Chemistry Major**

In addition to the general education requirements (see pp. 139-140), 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	4-4
CHE 151L-152L	General Chemistry Lab I-II	1-1
CHE 251	Quantitative Analysis	2
CHE 251L	Quantitative Analysis Lab	2
CHE 252	Instrumental Analysis	2
CHE 252L	Instrumental Analysis Lab	2
CHE 253-254	Organic Chemistry I-II	4-4
CHE 253L-254L	Organic Chemistry Lab I-II	1-1
CHE 341-342	Physical Chemistry I-II	3-3
CHE 341L-342L	Physical Chemistry Lab I-II	1-1
CHE 397,398	Junior Science Seminar I, II	1/2,1/2
CHE 432	Inorganic Chemistry	3
CHE 432L	Inorganic Chemistry Lab	1
CHE 497,498*	Senior Science Seminar I, II	1,1
	Subtotal	43

\*SCI 497 may be taken in place of CHE 498.

### C. Required courses in Mathematics:

		Credits
MAT 143-153**	Precalculus Algebra and Trigonometry	4-4
MAT 241-242**	Introduction to Calculus and Analytical Geometry I-II	4-4
MAT 341-342**	Intermediate Calculus I-II	3-3
	Subtotal	22

\*\*A student may be exempted from MAT 143-153 by a qualifying examination.

### D. Required courses in Physics:

		Credits
PHY 241-242	General Physics I-II	5-5
PHY 341	Modern Physics	3
PHY 351	Modern Physics Laboratory	1
	Subtotal	14

# Bachelor of Science Degree

E. Science Electives: An additional 21 credits in science, mathematics, engineering, or computer science are required from the following:

Any Biology course  
300 or 400 level Chemistry courses  
200, 300 or 400 level Mathematics courses except MAT 232  
Any Computer Science course except CSC 111  
Any 200 level engineering courses  
300 level physics courses

F. The following courses are strongly recommended in partial fulfillment of the requirements in Section D:

		Credits
BIO 245	Principles of Genetics	4
CHE 348	Biochemistry	4
CHE 348L	Biochemistry Lab	1
CHE 465	Selected Topics in Chemistry	3
CHE 495	Directed Independent Research	1-4
MAT 346	Differential Equations	3

G. Pre-medical students are advised to take:

		Credits
BIO 141-142	General Biology I-II	4-4
BIO 245	Principles of Genetics	4
CHE 348	Biochemistry	4
CHE 348L	Biochemistry Lab	1

## **Computer Science Major**

In addition to the general education requirements (see pp. 139-140), 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 Computer Science:

		Credits
CSC 117	Introduction to Programming I	4
CSC 118	Introduction to Programming II	4
CSC 241	Introduction to Computer Architecture and Digital Systems	4
CSC 242	Data Structures	4
CSC 243	Digital Communications and Networks	4
CSC 245	Databases and Information Retrieval	3
CSC 310	Web Applications Development	3
CSC 333	Programming Languages	3
CSC 397,398	Junior Science Seminar I, II	1/2,1/2
CSC 410	Principles of Operating Systems	3
CSC 420	Software Engineering	4
CSC 497,498*	Senior Science Seminar I, II	1,1

\*SCI 497 may be taken in place of CSC 498.

# Bachelor of Science Degree

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C. An additional 15 credits chosen from 200-400 level elective courses in CSC, MAT, BIO, CHE, PHY, or CIS. No more than six of the elective credits can come from outside of CSC. Any 200-level credits must come from the College of Science and Mathematics, are limited to a total of six credits, and may not include MAT 232. A maximum of three credits of CSC 496 (Internship/Field Studies) can be applied to this elective requirement.

D. Required courses in Mathematics:		Credits
MAT 215	Introduction to Number Theory	3
MAT 233	Discrete Mathematics	3
MAT 235	Introductory Statistics with Applications	4
MAT 241	Introduction to Calculus and Analytical Geometry I	4
MAT 242	Introduction to Calculus and Analytical Geometry II	4
MAT 261	Linear Algebra	4

E. One of the following Science sequences is required:**		Credits
BIO 141-142	General Biology I-II	4-4
CHE 151-152	General Chemistry I-II	4-4
CHE 151L-152L	General Chemistry Lab I-II	1-1
PHY 241-242**	General Physics I-II	5-5

*\*\*Partially satisfies the general education requirement in Science and Mathematics.*

*Note: It is recommended that students with an interest in computer engineering or robotics take the PHY 241-242 sequence, and that students with an interest in medical technology and computing take the Biology 141-142 sequence.*

## Concentration in Computational Biology

Students pursuing a B.S. in Computer Science may or may not also elect to complete a Concentration in Computational Biology. This interdisciplinary concentration will prepare students to participate in new frontiers of research in which gigantic volumes of data are analyzed to seek answers to questions in molecular, medical, and environmental biology. The requirements to complete the Concentration in Computational Biology include all of the requirements for the B.S. Computer Science major, except one noted below, plus the following:

Students must complete the following course in partial fulfillment of the Section D mathematics electives requirement:

MAT 261	Linear Algebra	4
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Students must complete the following courses in partial fulfillment of the Section E science electives requirement:

BIO 141-142	General Biology I-II	4-4
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Students must complete the following courses in fulfillment of the Section F supporting discipline requirement:

BIO 223	Ecology	4
BIO 245	Principles of Genetics	4
BIO/CSC/MAT 361	Bioinformatics	4

# Bachelor of Science Degree

Students need to complete only 3 credits from among the 300- or 400-level electives in Section C, instead of the 6 credits required for non-Computational Biology Computer Science majors.

## **Marine Biology Major**

The requirements for a Bachelor of Science 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 College 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 course 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 fulfilling the general education requirements for a Bachelor of Science degree, students must pass a Science Comprehensive Examination following completion of formal academic coursework and prior to graduation.

In addition to the general education requirements (see pp. 139-140), 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
BIO 245	Genetics	4
MSC 239	Oceanography	4
BIO 349	Aquatic Plant Biology	4
BIO 360	Cell and Molecular Biology I	4
BIO/MBI 397-398	Junior Science Seminar	1-1
MBI 424	Marine Ecology	4
BIO/MBI 497, 498*	Senior Science Seminar I, II	1,1

\*SCI 497 may be taken in place of either BIO 497 or 498.

### C. Required Courses in Related Fields (30-32 credit hours): Credits

CHE 151-152	General Chemistry	4-4
CHE 151L-152L	General Chemistry Lab I-II	1-1
MAT 241-242	Introduction to Calculus and Analytical Geometry I-II	4-4
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
MAT 235	Introductory Statistics with Applications	4

### D. Science, Technology and Mathematics (STEM) Electives: An additional 15 credit hours minimum are required from the following:

# Bachelor of Science Degree

		Credits
BIO 210	Research Methods I	2
BIO 224	Population Biology	4
BIO 295	Responsible Conduct in Research	1
BIO 310	Research Methods II	2
BIO 339	Vertebrate Structure	5
BIO 342	Animal Physiology	4
BIO 350	Terrestrial Plant Biology	4
BIO 352	Plant Physiology	4
BIO 353	Developmental Biology	3
BIO 355-356	Biology of Microorganisms I-II	4-4
BIO 361	Bioinformatics	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 (maximum 6 credits)	1-6
BIO 496	Internship/Field Studies (maximum 4 credits)	1-4
Any MBI or MSC course		
Any 200, 300, or 400 level Chemistry, Math, or Physics Course except MAT 232		
Any ENV course		
SCI 100 (if taken as a freshman), The Caribbean: The Natural World		
SCI 220 Introduction to Geographic Information System		
Any CSC course except CSC 111 or CSC 119		
STE 110 and/or STE 112		

## **Mathematics Major**

In addition to the general education requirements (see pp. 139-140), 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 Mathematics:

		Credits
MAT 215	Introduction to Number Theory	3
MAT 241-242	Introduction to Calculus and Analytic Geometry I-II	4-4
MAT 261	Linear Algebra	4
MAT 341-342	Intermediate Calculus I-II	3-3
MAT 362	Abstract Algebra I	3
MAT 397, 398	Junior Mathematics Seminar I, II	1/2, 1/2
MAT 441	Introductory Analysis I	3
MAT 497, 498*	Senior Mathematics Seminar I, II	1,1

C. Six elective courses from the following are required:

*Note: A cluster of four courses must be approved by your advisor*

(see G: Suggested tracks)

		Credits
MAT 233	Discrete Mathematics	3
MAT 301	Modern Geometry	3

# Bachelor of Science Degree

		Credits
MAT 325	Numerical Analysis	3
MAT 332	Mathematical Statistics	3
MAT 344	Probability	3
MAT 346	Differential Equations	4
MAT 348	Complex Variables	3
MAT 352	Mathematical Modeling	3
MAT 361	Bioinformatics	4
MAT 386	History and Philosophy of Mathematics	3
MAT 442	Introductory Analysis II	3
MAT 458	Topology	3
MAT 461	Abstract Algebra II	3
MAT 465,466	Special Topics	3,3
MAT 499	Approved Independent Study	3
One approved upper level course in another discipline (See F)		

## D. Required Courses in Related Fields: Credits

CSC 117	Introduction to Programming	4
PHY 241-242**	General Physics I-II	5-5

## E. An additional 9 credits in science and mathematics are required from the following:

- 200 level or above Biology courses
- Any Chemistry course except CHE 111-112
- 200 level or above Marine Biology or Marine Science courses
- 300 or 400 level Mathematics courses
- Any Computer Science course except CSC 111
- 300 or 400 level Physics courses

## F. The following are strongly recommended: Credits

ECO 221	Introduction to Macro-economics	3
ECO 222	Introduction to Micro-economics	3
PHY 311	Classical Mechanics	3
MAT 442	Introductory Analysis II	3
or MAT 461	Abstract Algebra II	3
MAT 465,466	Special Topics	3, 3
PHY 321	Electromagnetism	3
PHY 341	Modern Physics	3
SSC 327-328	Quantitative Research Methods in the Social Sciences	4-4

## G. Suggested Tracks:

**Applied:** For majors interested in applied mathematics in the physical and engineering sciences, actuarial sciences, or business Credits

MAT 325	Numerical Analysis	3
MAT 332	Mathematical Statistics	3
MAT 344	Probability	3
MAT 346	Differential Equations	4
MAT 348	Complex Variables	3
MAT 352	Mathematical Modeling	3

# Bachelor of Science Degree

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One approved upper level course in another discipline (See F)

**Teaching:** For majors considering a career in secondary education Credits

MAT 233	Discrete Mathematics	3
MAT 301	Modern Geometry	3
MAT 332	Mathematical Statistics	3
MAT 344	Probability	3
MAT 352	Mathematical Modeling	3
MAT 386	History and Philosophy of Mathematics	3

**Graduate:** For majors considering graduate study in mathematics Credits

MAT 348	Complex Variables	3
MAT 442	Introductory Analysis II	3
MAT 458	Topology	3
MAT 461	Abstract Algebra II	3

## Concentration in Computer Science:

The following Computer Science courses are required. Nine of these credits will fulfill the required 9 additional credits in science and mathematics (see E).

		Credits
CSC 118	Introduction to Programming II (C++)	4
CSC 197	Computer Science Seminar	1
CSC 239	Scientific Computing	2
CSC 242	Data Structures	4
CSC 317	Introduction to Programming III	3

The following courses are required. They serve as partial fulfillment of the six elective courses in mathematics (see C):

		Credits
MAT 233	Discrete Mathematics	3
MAT 325	Numerical Analysis	3
MAT 332	Mathematical Statistics	3
or MAT 348	Probability	3
CSC 352	Analysis of Algorithms (Approved upper-level course in another discipline)	3

## Concentration in Computational Biology

Students earning the BS Mathematics Major may elect to complete a Concentration in Computational Biology. This interdisciplinary concentration will prepare students to participate in new frontiers of research in which gigantic volumes of data are analyzed to seek answers to questions in molecular, medical, and environmental biology. The requirements to complete the Concentration in Computational Biology include all of the requirements for the BS Mathematics Major.

Students must complete the following courses in partial fulfillment of the Section C mathematics electives requirement: (6 courses)

		Credits
MAT 325	Numerical Analysis	3
MAT 332	Mathematical Statistics	3



# Bachelor of Science Degree

		Credits
MAT 352	Mathematical Modeling	3
MAT/BIO/CSC 361	Bioinformatics	4
or MAT 346	Differential Equations	4
MAT 344	Probability	3
or MAT 233	Discrete Mathematics	3
CSC 242	Data Structures (the approved upper level course in another discipline)	4

Students must complete the following courses. Nine of these credits will fulfill the Section E science and mathematics electives requirement: (5 courses)

		Credits
CSC 118	Introduction to Programming II	4
BIO 245	Principles of Genetics	4
BIO 223	Ecology	4
or BIO 360	Cell and Molecular Biology I	4
or BIO 370	Evolution	4
Additional Courses		
BIO 141-142	General Biology I-II	4-4

\*SCI 497 may be taken in place of either MAT 497 or 498.

\*\*Partially satisfies the general education requirement in mathematics and science.

## **Physics with Astronomy Authentic Research Experience (PAARE) Major**

The Bachelor of Science in Physics with Astronomy Authentic Research Experience (PAARE) is a 4-year degree for students who wish to specialize in physics and/or astronomy and who may pursue graduate studies. The degree is sufficiently general that students choosing to continue their graduate studies may do so in any field of physics.

In addition to the general education requirements or 18 credits of humanities and 12 hours of social sciences, 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 Physics:

		Credits
PHY 241, 242	General Physics I-II	5,5
PHY 271	Astronomy I	3
PHY 311	Classical Mechanics I	3
PHY 321	Electromagnetism	3
PHY 341	Modern Physics	3
PHY 351	Modern Physics Lab	1
PHY 371	Astronomy II	3
PHY 397, 398	Junior Science Seminar I, II	0.5, 0.5
PHY 411	Thermal and Statistical Physics	3

# Bachelor of Science Degree

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		Credits
PHY 441	Quantum Mechanics	3
PHY 481	Astronomy Lab I	1
PHY 482	Astronomy Lab II	1
PHY 495	Directed Independent Research	1-4
PHY 496	Internship/Field Studies	1-4
PHY 497, 498	Senior Science Seminar I, II	0.5, 0.5

## C. Required courses in Mathematics:

		Credits
MAT 143, 153*	Pre-calculus Algebra and Trigonometry	4,4
MAT 241, 242	Introduction to Calculus and Analytical Geometry I-II	4,4
MAT 261	Linear Algebra	4
MAT 341, 342	Intermediate Calculus I-II	3,3
MAT 346	Differential Equations	3
MAT 325	Numerical Analysis	3

\*A student may be exempted from MAT 143-153 by a qualifying examination.

## D. Required courses in chemistry:

		Credits
CHE 151-152	General Chemistry I-II	5-5

## E. Required courses in computer science:

		Credits
CSC 117	Introduction to Programming I	4
CSC 239	Scientific Computer Applications	2

F. Science Electives: An additional 9 credits in science, mathematics, engineering, or computer science are required from the following:

Any Selected Topics in physics

Any biology course

200, 300, or 400 level chemistry course

200, 300 or 400 level mathematics course except MAT 232 and MAT 257

Any computer science course except CSC 111 and CSC 120

Any 200 level engineering course

## MINORS

### Computational Science Minor

Computational science (or Scientific Computing) is an interdisciplinary field that combines mathematical and computing methods for solving complex real-world scientific, financial or societal problems through modeling, simulation, optimization, or visualization methods. This Computational Science minor offers students opportunities to study and apply scientific and mathematical techniques in various application fields. The minor in Computational Science will prepare students to solve complex problems by completing computational based projects that require intensive computational processes and high-performance computing tools.

Note: Computational Science or Scientific Computing should not be confused with Computer Science which is the study of the theoretical foundations of information and computation, and of practical techniques for their implementation and application in computer systems.

In addition to the General Education prerequisites, students must complete 23-26 credits with an average grade of C or higher.

COMPUTATIONAL SCIENCE:		PREREQUISITE(S)	CREDITS
Required Courses			
CSC 118	Programming II	CSC 117	4
CSC 242	Data Structure	CSC 118	4
CSC 239	Scientific computing	none	2
MAT 261	Linear Algebra	MAT 241 (may be taken concurrently)	4
Select one of the following:			
MAT 325	Numerical Analysis	MAT 261 (may be taken concurrently) CSC 117 (or knowledge of a programming language)	4
or			
MAT 352	Mathematical Modeling	MAT 261 (may be taken concurrently)	4
At least 6 credits from the following:			
CSC 317	Programming III	CSC 242	3
CSC 465	Introduction to High Performance Computing*		3
CSC 361	Bioinformatics	BIO 142, CSC 118, MAT 153, either (BIO 245 and BIO 223) or (8 credits of 200-level CSC) or (MAT 233 and MAT 261)	4
MAT 352	Mathematical Modeling**	MAT 261	3
MAT 325	Numerical Analysis**	MAT 261 and CSC 117	4
MAT 346	Differential Equations	MAT 342 (may be taken concurrently)	4
CHE 341	Physical Chemistry I	MAT 242 and PHY 241	3
CHE 342	Physical Chemistry II	CHE 341	3
CSC 466	Selected Topics: Data Mining	CSC 332 or CSC 245	3
BIO 465, CHE 465, MAT 465, MBI 465, or PHY 465	Selected Topics in Computational Science***	To be announced in each topic	2-4

# Bachelor of Science Degree

		PREREQUISITE(S)	CREDITS
BIO 495, CHE 495, MAT 495, MBI 495, or PHY 495	Directed Independent Research in Computational Science***	To be announced in each topic	2-4

\*Computer Science majors are required to take introduction to Hi Performance Computing: Parallel and Distributed Computing CSC 465

\*\* Cannot be used to satisfy both the required and the elective section of the minor.

\*\*\* As approved by the Chair of Computer and Computational Science in consultation with the Chair of the of the department of the student's major. Approval will be based on the coherence of the selected courses in preparing the student for work in a particular interdisciplinary area.

## Environmental Science Minor

The Environmental Science minor affords students the opportunity to learn about Environmental Science as a complement to their chosen major or to develop independent interest in the area. In addition to the General Education prerequisites, students must complete (with a grade of C or higher) at least 18 credits.

ENVIRONMENTAL SCIENCE:		PREREQUISITE(S)	CREDITS
Required Courses			
CJU/SSC/ SCI 220	Introduction to Geographic Information Systems		3
ENV 200	Introduction to Environmental Science and Policy	SCI 100, MAT 024, ENG 101/RCA 021	3
ENV 365 or 366	Topics in Environmental Science	ENV 200	4
MAT 235	Introductory Statistics with Applications	MAT 140 or 143	4

Two classes, chosen from the following, one of which must be at the 300 level:

ENG 300	Scientific Writing	ENG 201 & one semester BIO, CHEM or PHY	3
COM 325	Web Publishing	COM 230	4
SSC 327 & 328	Quantitative Research Methods	MAT 140-235, SSC 327, SSC 328	4
MAT 332	Mathematical Statistics	MAT 242	3
MAT 352	Mathematical Modeling	MAT 261	3
MAT/BIO/ CSC 361	Bioinformatics	BIO 141-142, CSC 117-118, MAT 143-153, either (BIO 245 and BIO 223) or (8 credits of 200-level CSC) or (MAT 233 and MAT 261)	4
BIO/MBI 220	Marine Invertebrate Zoology	BIO 142	5
BIO 224	Population Biology	BIO 223	4
BIO 349	Aquatic Plant Biology	BIO 142	4
BIO 350	Terrestrial Plant Biology	BIO 142	4
BIO 370	Evolution	BIO 245	3

# Bachelor of Science Degree

		<b>PREREQUISITE(S)</b>	<b>CREDITS</b>
BIO/MBI 430	Coral Reef Biology	BIO 223 & one of BIO 220, MBI 222, BIO 349	4
BIO 495	Directed Independent Research	20 credits in some combination of BIO, MBI, CHE, PHY, CSC, & MAT	1-6
BIO 496	Internship/Field Studies	20 credits in some combination of biology courses	1-4
CHE 251	Quantitative Analysis	CHE 152	4
CHE 252	Instrumental Analysis	CHE 152	4
CHE 253 &/or 254	Organic Chemistry I-II	CHE 152	5, 5
CHE 348	Biochemistry	CHE 254	5
MBI 222	Ichthyology	BIO 141-142	4
MBI 424	Marine Ecology	BIO 223 & one of MBI 220, MSC 239, BIO 349 or MBI 222	4
MSC 239	Oceanography	BIO 141-142	4
GOG 232	Geography of the Caribbean	none	3
BIO 223	Ecology	BIO 141-142	4
MSC 465 or 466	Selected Topics (must be approved)	TBA with ea. topic	1-4
DSC 325	Statistics for Management Decisions	MAT 232 & CIS 101	3
PHY 211/212	Intro to Physics I-II	MAT 153	4, 4
PHY 241 &/or 242	General Physics I-II	MAT 241-241	5,5
SCI 200	Changes in the Natural World	SCI 100, ENG 120	3
SCI 210	Introduction to Meteorology	SCI 100, ENG 120, MAT 140 or 143	4
SCI 301	Application of Principles from the Natural World	MAT 140 or 143	3

## ***Health Science Minor***

The health science minor is an interdisciplinary minor that is housed in the College of Science and Mathematics. Courses from a variety of UVI's colleges of schools help to make this minor accessible to students in most of the University's degree programs. With this goal in mind a wide range of courses will count towards the electives of this minor in addition to the required in psychology, biology and nursing. Students graduating with a health science minor will be prepared for a wide-range of career options in health fields that will depend on their major field of study or continuing secondary education.

**Prospective Students should be aware:** As currently structured, entry-level courses can be completed on either campus, but the minor will need to be completed on St. Thomas Campus. Students must complete the Health Science Minor required and elective courses with a grade of C or higher

Required Courses:

<b>HEALTH SCIENCES</b>		<b>PREREQUISITE(S)</b>	<b>CREDITS</b>
NUR 100	Medical Terminology	None	1
PSY/SOC 241	Social Determinants of Health and Disease	ENG 100/WAX 011 ENG 101/RAC 021 Or SAT exemption	3

# Bachelor of Science Degree

		<b>PREREQUISITE(S)</b>	<b>CREDITS</b>
NUR 201	Consumer Health	ENG 100/WAX 011 ENG 101/RAC 021 Or SAT exemption	3
SCI 305	Biology of Health and Disease	MAT 140 or MAT 143 ENG 201	3
NUR 310	Introduction to Racial and Ethnic Disparities in Health Care	ENG 201	3
Seven credits, minimum of two classes, chosen from the following courses, one of which must be at the 300-level:			
ACC 342	Managerial Accounting	ACC 202, HRM 234	3
ACC 442	Auditing	ACC 302	3
BIO 151 or 261	Human Anat. and Physiol. I	CHE 112 or CHE 152	4
BIO 152 or 262	Human Anat. and Physiol. II	BIO 261	4
BIO 301	Microbiology for Health Sciences	BIO 142 or BIO 262	4
BIO 355	Biology of Microorganisms	BIO 245, CHE 254	4
BIO 495	Directed Independent Research (Approved* health science topic)	20 credits in some combination of BIO, MBI, CHE, PHY, CSC & MAT	1-4
BIO 496	Internship/Field Studies (Approved* health science topic)	20 credits in some combination of biology courses	1-4
CHE 251	Quantitative Analysis	CHE 152	4
CHE 252	Instrumental Analysis	CHE 152	4
CHE 254	Organic Chemistry I-II	CHE 152	5
CHE 348	Biochemistry	CHE 254	5
CIS 310	Advanced Business Software	CIS 300 or CSC 310	3
CIS 357	Business Information Systems	CIS 310 or CSC 243	3
COM 325	Web Publishing	COM 230	4
CSC 245	Databases and Information Retrieval	CSC 241, CSC 242	3
DSC 325	Statistics for Management Decisions	MAT 232 & CIS 101	3
ENG 300	Scientific Writing	ENG 201, & one semester BIO, CHE, or PHY	3
HRM 243	Front Office Management	HRM 234, HRM 233	3
MAT 235	Mathematical Statistics	MAT 153	3
MAT/CSC/BIO 361	Bioinformatics	BIO 141-142, CSC 117-118, MAT 143-153, BIO 245 or (8 credits of 200-level CSC) or (MAT 233 and MAT 261)	4
PSY 332	Industrial Organizational Psychology	PSY 202	3
PSY 350	Drugs, Behavior, and Society	PSY 120	3
SSC 327	Quantitative Research Methods	MAT 140 or Mat 235	4
SSC 328	Quantitative Research Methods	SSC 327	4
----- 496	Approved* Internship course	Varies by discipline	1-4

\* Appropriateness of Internship or Directed Independent Study topics are determined by the Director of the Health Science minor or Chair of Biological Sciences.

# Bachelor of Science Degree

## **Mathematics Minor**

The minor in Mathematics affords students the opportunity to extend their quantitative abilities as a route to deeper understanding of their chosen field and to greater marketability after graduation. Students must complete at least 21 hours in Mathematics beyond the level of introductory calculus (MATH 241-242) to be distributed as follows:

### Required Courses

<b>MATHEMATICS:</b>		<b>PREREQUISITE(S)</b>	<b>CREDITS</b>
MAT 261	Linear Algebra	MAT 241 may be taken concurrently	4
MAT 341	Intermediate Calculus I	MAT 242	4
MAT 342	Intermediate Calculus II	MAT 341	4

At least 9 credits to be chosen from the following list:

MAT 215	Introduction to Number Theory	MAT 140 or MAT 143	3
MAT 233	Discrete Mathematics	MAT 140 or MAT 143	3
MAT 301	Modern Geometry	MAT 242	3
MAT 325	Numerical Analysis		3
MAT 332	Mathematical Statistics	MAT 242	3
MAT 344	Probability	MAT 242	3
MAT 346	Differential Equations	MAT 342 may be taken concurrently	4
MAT 348	Complex Variables	MAT 341 corequisite	3
MAT 352	Mathematical Modeling	MAT 261	3
MAT 361	Bioinformatics	BIO 142, CSC 118, MAT 153, either (BIO 245 and BIO 223) or (8 credits of 200-level CSC)or (MAT 233 and MAT 261)	4
MAT 362	Abstract Algebra I	MAT 261 and MAT 215 or MAT 233	3
MAT 386	History and Philosophy of Mathematics	MAT 242	3
MAT 441	Introductory Analysis I	MAT 341	3
MAT 442	Introductory Analysis II	MAT 441	3
MAT 458	Topology	MAT 341	3
MAT 465, 466	Special Topics	to be announced for topic	3, 3
MAT 461	Abstract Algebra II	MAT 362	3
MAT 499	Approved Independent Study	permission of instructor, Math chair	1-3