UWI

ST. AUGUSTINE CAMPUS

2013/2014

UNDERGRADUATE

FACULTY OF SCIENCE & TECHNOLOGY

REGULATIONS & SYLLABUSES

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MESSAGE FROM THE DEAN

Welcome to the Faculty of Science & Technology (FST), The University of the West Indies, St. Augustine. We are extremely proud and delighted that you have chosen the FST for your tertiary education. This new Faculty which partially replaces the former Faculty of Science & Agriculture, will continue to focus on traditional and important disciplines in science such as Mathematics, Physics, Chemistry, Computer Science and Biological Sciences. We have also begun new programmes in exciting and important areas of technology such as, Environmental Technology, Information Technology, and Alternative Energy Technology and are in the process of developing new programmes in Biotechnology, Electronics and Computer Technology.

The FST is the second largest faculty at the St Augustine Campus and also the most diverse in terms of academic programmes offered. At the FST we have highly qualified and competent academic, administrative, technical and support staff, and many state-of-the-art laboratories. We promise to offer you an educational experience that is second to none.

This booklet contains important information on Faculty Regulations as well as details on our various programmes and courses. We encourage you to become very familiar with it. We have put in place several support systems in order to facilitate your success in your chosen field of study. We encourage you to visit your academic advisor on a regular basis to seek assistance in planning your academic programme of study. We also have a Student Services Unit and a dedicated Deputy Dean (Student Matters) who is readily available to assist in addressing problems that you may encounter from time to time.

On behalf of the staff of the FST, I wish you a warm welcome as well as an enjoyable and successful stay in our Faculty.

Professor Indar Ramnarine
DEAN

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SECTION II - INTRODUCTION

A. PROGRAMME OFFERING IN THE FACULTY OF SCIENCE AND TECHNOLOGY

1. The Faculty of Science and Technology (FST) offers the following undergraduate programmes leading to the award of BSc degrees:

BSc IN THE FOLLOWING SPECIAL OPTIONS:

i. Actuarial Science
ii. Biology with specialisations in:
   a) Plant Biology
   b) Zoology
   c) Ecology & Environmental Biology
   d) Biotechnology
iii. Biomedical Technology
iv. Chemistry
v. Chemistry and Management
vi. Computer Science
vii. Computer Science and Management
viii. Environmental Science & Sustainable Technology
ix. Information Technology
x. Statistics and Economics

The Faculty also offers a **BSc (General)** degree with major(s) and minor(s) in various disciplines as shown in TABLE 1.

DISCIPLINE	MAJORS	MINORS
Biochemistry	Biochemistry	Biochemistry
Biology	Biology	Biology Biotechnology* Botany* Environmental Biology* Marine Biology* Zoology* (*With the exception of Biology minors are available only to students who started prior to 2012/13)
Chemistry	Chemistry	Chemistry Analytical Chemistry Applied Chemistry
Computer Science	Computer Science	Computer Science
(Multidisciplinary)	Environmental & Natural Resource Management	Environmental & Natural Resource Management
Information Technology	Information Technology	
Mathematics	Mathematics	Mathematics Statistics Actuarial Science
Physics	Physics	Electronics Environmental Physics Materials Science Medical Physics & Bioengineering
Note: For detailed information on special options/ majors/ minors, please refer to the relevant Departmental sections of this booklet.		

2. The degree of Bachelor of Science is awarded on the basis of a programme of studies selected from courses in the Science disciplines together with certain Foundation courses and in some cases a number of approved courses from other Faculties.

3. FST offers the following BSc degrees (the terms Major, Minor, and Special Option are defined in the Glossary):

   (a) **A BSc (General) degree with**
   - i. a single major in a FST discipline.
   - ii. a joint major in two disciplines only, one of which may be from a Faculty other than the FST.
   - iii. double majors in a single FST discipline, currently offered only in Mathematics and Biology.
   - iv. a single major in a FST discipline PLUS one or two minors from FST and/or other Faculties.

   (b) **BSc Special Option** comprising a prescribed set of departmental, inter-departmental FST or out-of-faculty courses.

   (c) All students admitted to the FST to read the BSc Special Options listed hereunder are required to register for courses in the Faculty of Social Sciences and must be familiar with the list of cross faculty pre-requisites and equivalencies listed in Appendix 1.
   - i. BSc Actuarial Science
   - ii. BSc Chemistry and Management
   - iii. BSc Computer Science and Management

B. COURSES OFFERED AND THEIR WEIGHTING

4. The following courses which may consist of both theoretical and/or practical components are offered by the University:

   (a) **FST FACULTY COURSES:**
   These are courses offered by the FST (in-faculty courses). These include Level 0 (or Preliminary) courses in Physics, Chemistry, Mathematics and Biology (taught by the Open Campus on behalf of FST), Level I (or Introductory) and Levels II & III (or Advanced) courses. Preliminary courses may be used to satisfy matriculation requirements or pre-requisites for Level I, II or III courses**.**
   Preliminary courses, however, do not contribute towards the credit requirements for the award of the BSc degree but contribute towards a semester credit loading.

   (b) **SERVICE COURSES**:
   These provide students with basic technical and analytical skills.

   (c) **OUT-OF-FACULTY COURSES**:
   These are courses offered by Faculties other than FST which may contribute towards the requirements for the award of a degree. Approval must be granted by the Dean before a student can pursue an out-of-Faculty course if such course is not part of the candidate's degree programme.

   (d) **FOUNDATION COURSES:**
   - i. In order to qualify for the award of a BSc degree in the FST, all students must complete a minimum of nine (9) credits of Foundation Courses. These courses are Level I courses and are designed to augment the general education of students.
   - ii. The three Foundation Courses (3 credits each) required to be taken by the FST students are:
     - FOUN 1101 - Caribbean Civilisation
     - FOUN 1102 - Academic Writing for Different Disciplines (Option C)
     - FOUN 1301 - Law, Governance, Economy and Society
   - iii. The Foundation Course, FOUN 1210 (Science, Medicine and Technology in Society) will NOT count for credit towards programmes in FST.
   - iv. The Foundation courses will be examined on a Pass/Fail basis and will not count towards a student's GPA.
   - v. On entry into the FST a student may be required to pass the English Language Proficiency Test (ELPT) before s/he can register for FOUN 1102. However, students with the following qualifications can register directly for FOUN 1102.
     - Grade I in CSEC English Language, or
     - Grade I or II in CAPE Communication Studies, or
     - Grade A or B in General Paper in the GCE A-Level Examination.

5. Courses normally extend over one (1) semester, but in special cases may extend over two (2) semesters.

6. The weight of a course is expressed in terms of credit hours, and the credit-weighting of a course is determined by the Faculty which administers the courses. In general, a course with one contact hour per week for one semester has a weighting of one credit.

C. CO-CURRICULAR CREDITS

7. Courses involving independent, supervised activities which would earn the student co-curricular credits may be pursued upon approval by the Campus Academic Board. The co-curricular programme allows you to choose from a range of non-academic courses that help you to acquire characteristics to excel in life in the 21st century. These courses are practical in nature and help you to develop attributes which are critical for your success.

   i. Students are eligible to register for co-curricular credits after their first semester of studies.

   ii. Each student is eligible to count no more than three (3) credits towards his/her degree for involvement in co-curricular activities.

   iii. The programme of co-curricular activities must have the approval of the Faculty and Academic Board before it is undertaken by the student.

   iv. A Deputy Dean with responsibility for Outreach is the Faculty's Coordinator for the co-curricular programme. Please consult with the Coordinator if you are interested in pursuing co-curricular activities.

   v. Co-curricular credits will be awarded on the following basis:
      - students must be involved in the activity for at least one (1) semester
      - explicit learning outcomes must be identified for each activity
      - there must be clearly defined mode(s) of assessment for each activity

   vi. The grading of co-curricular activities will be on a pass/fail basis and will not contribute to a student's GPA

   vii. The three Level I credits earned for involvement in co-curricular activities may be included as part of the overall general credit requirement for the award of the BSc General Degree. However, such credits earned shall NOT be used in the computation of a student's Weighted Grade Point Average for determining the Class of Honours.

   viii. For further details on co-curricular offerings, please consult the Deputy Dean (Outreach) or visit the website at **http://sta.uwi.edu/cocurricular/**

   Examples of approved co-curricular offerings are:
   - COCR 1001 - Sports: Minding SPEC (3 Credits)
   - COCR 1002 - Debating (3 Credits)
   - COCR 1003 - Leadership and/or Service (3 Credits)
   - COCR 1012 - Workplace Protocol for Students (3 Credits) -
   - COCR 1030 – Technology Literacy (3 Credits)
   - COCR 1031 – Managing My High (MY HIGH): Alcohol, Drugs and Addictive Behaviours (3 Credits)

   Professional Microsoft Office - offered by Campus IT Services (CITS) in conjunction with the FST include:
   - COCR 1025 - Microsoft Office Word 2010 (1 Credit)
   - COCR 1026 - Microsoft Office Excel 2010 (1 Credit)
   - COCR 1027 - Microsoft Office PowerPoint 2010 (1 Credit)
   - COCR 1028 - Microsoft Office Outlook 2010 (1 Credit)
   - COCR 1029 - Microsoft Office Access 2010 (1 Credit)

D. EVENING UNIVERSITY

8. Currently, the FST offers only the BSc in Information Technology through the Evening University. Please consult the section under the Department of Computing and Information Technology in this booklet for specific details of the programme offered.

9. Students in the Evening University Programme will normally be required to register for a maximum of 9 credits of courses per semester. There will be three semesters per year in the Evening University. Classes will normally be held during the hours of 5:00-10:00 p.m. on weekdays and also on Saturdays. For further general information about the Evening University Programmes, please contact the Office of the Evening University or visit the website **http://sta.uwi.edu/evening/introduction.asp**

E. DEAN'S HONOUR ROLL

10. **Eligibility for inclusion on the Dean's Honour Roll**
The following guidelines are applicable:

(a) Inclusion on the Dean's Honour Roll will be on a Semester basis. The Summer School Programme will not be considered.

(b) Students must obtain a Semester GPA of 3.8 and above in any semester

(c) Full-time students must have passed a minimum of 12 Faculty credits in the semester. Part-time and Evening University students must have passed a minimum of 6 credits of Faculty courses in the semester.

Credits gained for the following will NOT be taken into consideration in computing the Dean's Honour Roll:
- Foundation courses
- Co-curricular offerings
- Internship programmes
- Audited courses
- Summer courses
- Not-for-credit courses

(d) Repeat courses will be included in the computation of the Semester GPA towards the Dean's Honour Roll

(e) Special consideration will be given to students who are differently-abled and who have obtained a semester GPA of 3.8 and above but who have registered for less than 12 Faculty credits.

Such students must declare and provide supporting documents as evidence of their disability at the start of the semester.

Decisions for inclusion of such differently-abled students in the Dean's Honour Roll will be taken at the Faculty's Board of Examiners Meeting. In addition, such students must be registered with the Academic Support/Disabilities Liaison Unit (ASDLU).

F. ACADEMIC SUPPORT/DISABILITIES LIAISON UNIT (ASDLU)

11. The Unit is the first and most important stop for high quality academic support for the diverse population of students throughout the University including full-time, part-time and evening students, international students, student athletes and students with special needs.

(a) **Support Services for STUDENTS WITH SPECIAL NEEDS (Temporary and Permanent)**
- Provision of aids and devices such as laptops, USB drives, tape recorders and special software
- Special accommodations for examinations
- Classroom accommodations
- Academic support
- Liaison with faculties and departments

Students with special needs should make contact before or during registration. Every effort will be made to facilitate your on-campus requirements in terms of mobility, accommodation, coursework, examinations, and other areas.

No student of The UWI will be discriminated against on the basis on having special needs. Sharing your needs before registration will enable us to serve you better as a part of the Campus community.

(b) **Academic Support Services for ALL STUDENTS**
- Educational Assessment – LADS (dyslexia) – LASSI (Study Skills)
- Examination Strategies
- Workload Management
- Career Planning
- Study Skills
- Peer Tutoring

(c) **How do I register at ASDLU?**
- Visit ASDLU to make an appointment to meet the Co-ordinator.
- Complete the required registration form
- Students with disabilities must submit a medical report from a qualified medical professional
- An assessment of the student's needs will be conducted
- The required assistance will be provided

All Students experiencing academic challenges should communicate with Ms. Jacqueline Huggins, Coordinator, Academic Support/Disabilities Liaison Unit, south of The Alma Jordan Library.

Tel: 662-2002 Exts 83921, 83923, 83866, 84254.
Hours: 8: 30 am- 4:30 pm
Monday, Wednesday & Friday
8:30 am – 6:00 pm
Tuesday & Thursday to accommodate Part-time and Evening students.
Email: **ASDLU.Office@sta.uwi.edu**
Registration forms are available at the office or from the website at **www.sta.uwi.edu/asdlu**

SECTION III - GLOSSARY

TERM	DEFINITION
Anti-requisite	Two mutually exclusive courses of which credit may be granted for only one.
Co-requisite	A course which must be taken along with another specified course, in order to ensure the attainment of the complementary and/or independent competencies.
Course	A body of knowledge circumscribed by a syllabus to be imparted to students by sundry teaching methods and usually followed by an examination. A course may be either compulsory or elective.
Credit	A measure of the workload required of students. 1 Credit Hour is equivalent to 1 hour lecture/tutorial/problem class per week OR 2 hours of laboratory session per week for a semester.
Cumulative GPA	Grade point average obtained by dividing the total grade point earned by the total quality hours for which the student has registered for any period of time excluding courses taken on a Pass/Fail basis, audited courses, courses taken for Preliminary credit, incomplete and in-progress courses.
Discipline	A body of knowledge distinguishable from other such bodies on the basis of criteria such as method of enquiry, axioms, area of application.
Elective	A course within a programme taken by choice of the student.
Faculty courses	All courses except Foundation and Co-curricular courses
In-faculty courses	All faculty courses originating in the Science Faculties
Level	A state in a programme for which courses are designed (at UWI it is denoted by the first digit in a course code). For example BIOL 2062 is a Level II course whereas BIOL 3864 is a Level III course.
Major	A specified number of credits (normally 30-33) including prescribed courses from Level II & III from a single discipline (see Departmental course listing).
Marginal failure	35% to 39% in the overall examination.
Minor	A specified number of credits (normally 15 or 16) including prescribed courses from Levels II & III from a single discipline
Option	A prescribed combination of Levels I, II and III courses, within the Faculty or across Faculties, leading to a degree.
Out-of-faculty courses	All faculty courses originating in faculties other that the Faculty of Science and Technology
Part	Portion of a programme defined by the regulations governing the programme.
Plagiarism	The unauthorized and/or unacknowledged use of other person's intellectual efforts and creations howsoever recorded, without proper and unequivocal attribution of such source(s), using the conventions for attributions or citing used in this University.
Pre-requisite	A course which must be passed before the course for which it is required may be pursued.

Programme	A selection of courses (designed to achieve pedagogical goals) the taking of which is governed by certain regulations and the satisfactory completion of which (determined by such regulation) makes a candidate eligible for the award of a degree/ diploma/ certificate.
Preliminary Course	A Level 0 course used to satisfy entry requirements but does not contribute towards the requirements for the award of the degree.
Remedial Course	A course that is offered in Summer School only for students who have failed this course during the semester.
Science Faculties	The Faculties of Science and Technology.
Semester GPA	GPA computed on the basis of all courses done in a semester, without reference to weighting except in terms of credits. (The terms Grade Point, GPA, Quality Hours, Honours GPA, Cumulative GPA and Quality Points are defined in the UWI Grade Point Average Regulations Booklet).
Subject	An area of study traditionally assigned to the purview of a department.
Students:	
Part-Time Student	A part-time student will normally be expected to register for 6 to 9 credits of courses per semester. These courses may be scheduled at any time of the day on the timetable.
Full-time Student	A full-time student will normally be expected to register for 12 to 15 credits per semester.
Evening Student	A student registered in an Evening University Programme will be required to attend classes on weekdays between the hours of 5:00pm - 10:00pm and on Saturdays between the hours of 8:00am - 8:00pm.
Specially Admitted Student	Students admitted to pursue a limited number of courses.
Study Abroad/ Student Exchange	An exchange programme which allows students to spend one or two semesters at universities abroad in order to broaden their experience, understanding and perception of science in a different environment where a wider range of courses is available including independent study projects.
Supplemental Oral	An oral examination, offered on recommendation of Departments and Faculty, to students who have registered a marginal failure in an advanced course.
Weighted GPA	Weighted grade point average used to determine the class of degree. This GPA is computed on the basis of all courses done in the Advanced Part (Levels 2 & 3) of the Degree programme.

SECTION IV - FACULTY REGULATIONS

All students of the University are subject to University Regulations approved by the Senate of the UWI. Where there is conflict between the regulations of any Faculty and the University Regulations, the University Regulations shall apply.

G. QUALIFICATIONS FOR ADMISSION INTO THE FACULTY

11. In order to be admitted to the three-year degree programme, candidates must satisfy the University requirements for Matriculation (see the University Regulations for Undergraduate Students) and have passed the CSEC General Proficiency Level examination at Grades I, II or, since 1998, Grade III (or equivalent qualifications) in Mathematics, English Language and three additional subjects listed in Appendix 2.

12. Candidates must also:
    (a) have obtained passes in a minimum of two two-unit subjects at CAPE (or GCE A-Level or equivalent qualification), or

    (b) have an approved Associate Degree or equivalent certification with a minimum GPA of 2.5 in a relevant programme from a tertiary level institution recognised by UWI, or

    (c) have any other appropriate qualifications acceptable to the FST**.**

13. **In addition to the above general qualifications for admission, candidates must also satisfy the specific subject requirements for entry into the various FST programmes they wish to pursue.** These are listed in TABLE 2:

PROGRAMME	CAPE SUBJECT(S) (GCE A-LEVEL OR EQUIVALENT) REQUIREMENT
BSc General with majors in:	
• Biochemistry	Chemistry and Biology
• Biology	Two (2) subjects including Biology
• Chemistry	Two (2) subjects including Chemistry
• Computer Science	Two (2) subjects including Mathematics
• Information Technology	Two (2) subjects including one (1) science subject
• Mathematics	Two (2) subjects including Mathematics
• Physics	Two (2) subjects including Physics OR Mathematics with CSEC Physics or equivalent
BSc Special Options:	
• BSc Actuarial Science	Two (2) subjects including Mathematics (Minimum Grade II)
• BSc Biology with specialisation in Plant Biology	Two (2) subjects including Biology
• BSc Biology with specialisation in Zoology	Two (2) subjects including Biology
• BSc Biology with specialisation in Ecology & Environmental Biology	Two (2) subjects including Biology

• BSc Biology with specialisation in Biotechnology	Two (2) subjects including Biology
• BSc Biomedical Technology	Three (3) science subjects including Physics (Minimum Average Grade II)
• BSc Chemistry	Two (2) subjects including Chemistry
• BSc Chemistry and Management	Two (2) subjects including Chemistry – (Minimum Average Grade III or equivalent)
• BSc Computer Science	Two (2) subjects including Mathematics
• BSc Computer Science and Management	Two (2) subjects including Mathematics
• BSc Environmental Science & Sustainable Technology	Two (2) science subjects – (Minimum Average Grade III or B)
• BSc Information Technology	Two (2) subjects including one (1) science subject
• BSc Statistics and Economics	Two (2) subjects including Mathematics (Minimum Average Grade II)
For a list of approved science CAPE/GCE A-Level subjects, see Appendix 2.	

H. APPLICATION PROCEDURE

14. Applications for entry to the FST must be received by the Admissions Section of the Registry by January 31st of the year in which the applicant wishes to enter and shall be accompanied by certified evidence of all relevant examinations passed. Students are encouraged to apply online at **http://www.uwi.edu/students/admissions.aspx**.

I. LIST OF EXEMPTIONS

15. Provided that requirements to Statute 47 are fulfilled, students admitted to the FST may be exempted **with or without credits** from Level I and/or Level II or Level III courses if they:
    - are holders of degrees from approved universities; or
    - have partially fulfilled the requirements of such degrees; or
    - are holders of Associate Degrees from approved tertiary level institutions; or
    - have transferred from different BSc degree programmes or from other programmes of study within the University.

    Application for **EXEMPTIONS** must be made upon entry to the Registry (Admissions Section).

16. Where **EXEMPTIONS WITHOUT CREDITS** are granted, students will be required to pursue alternative courses as approved by the Head of Department. The following is a list of exemptions with/without credits currently offered by the FST:

(a) COSTAATT Associate Degree Graduates in ENVIRONMENTAL MANAGEMENT:
Students with a GPA of 2.75 or better admitted into the ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT PROGRAMME will be exempted **WITH CREDIT** from the following:
- BIOL 1462
- AGBU 1005, AGBU 1002 and AGSL 1000 (offered by the FFA)

(b) COSTAATT Associate Degree Graduates in ENVIRONMENTAL TECHNOLOGY:
Students with a GPA of 2.75 or better admitted into the ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT PROGRAMME will be exempted **WITH CREDIT** from the following:
- BIOL 1462
- AGRI 1012, AGSL 1000, AGBU 1002 (offered by the FFA)

(c) COSTAATT Associate Degree Graduates in ENVIRONMENTAL ENGINEERING:
Students with a GPA of 2.75 or better admitted into the ENVIRONMENTAL AND NATURAL RESOURCE MANAGEMENT PROGRAMME will be exempted **WITH CREDIT** from the following:
- AGSL 1000 (offered by the FFA).

(d) COSTAATT Associate in Science Degree in BIOLOGY:
Students entering the Faculty with a GPA of 2.75 and above in the COSTAATT Associate in Science Degree in Biology will be exempted **WITH CREDIT** from the following:
- CHEM 1062, BIOL 1262, BIOL 1263, BIOL 1362, BIOL 1364 and BIOL 1462

(e) COSTAATT Associate in Science Degree in CHEMISTRY:
Students entering the Faculty with a GPA of 2.75 and above in the COSTAATT Associate in Science Degree in Chemistry will be exempted **WITH CREDIT** from the following:
- CHEM 1065, CHEM 1066, CHEM 1067 and CHEM 1068

(f) COSTAATT Associate in Science Degree in PHYSICS:
Students entering the Faculty with a GPA of 2.75 and above in the COSTAATT Associate in Science Degree in Physics will be exempted **WITH CREDIT** from the following:
- PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214. PHYS 1215 and PHYS 1216.

(g) Students who have The UWI ROYTEC Associate Degree in Information Systems Management (ADISM) **with a minimum GPA of 2.50** will be accepted for entry **without exemption/credits** into the following programmes:
- BSc General (Major/Minor (Computer Science)
- BSc Computer Science
- BSc Computer Science and Management
- BSc Information Technology

(h) UWI ROYTEC Associate Degree in Information Systems Management (ADISM).
Students with a **GPA of 2.75 or better** admitted into the BSc INFORMATION TECHNOLOGY programme will be exempted **with credits** from the following courses:
- INFO 1500, INFO 1501, INFO 1502, INFO 1503, INFO 1504, INFO 1505, INFO 1506, INFO 1507.

and **will be permitted to register for Level II courses:**

J. REGISTRATION

17. (a) A student pursuing a degree in the FST may register as a full-time student, a part-time student or as an Evening University student. A student may apply to change his/her status during the tenure of the degree.

(b) A student who is in full-time employment may pursue a degree as a part-time student or as an Evening University student only.

(c) Full-time students may take up employment for not more than 12-hours per week without losing their full-time status. A student who is employed for more than 12-hours per week shall be registered as a part-time or an Evening University student.

(d) A full-time student is normally expected to register for 12 to 15 credits per semester at Level I and 12 to 16 credits per semester at Levels II/III.

(e) A part-time student is normally expected to register for 6 to 9 credits per semester offered under the day programme.

(f) An Evening University student is normally expected to register for 6 to 9 credits per semester at Level I and 6 to12 credits per semester at Levels II/III.

18. (a) Students must register for courses that they wish to pursue by the dates prescribed by the Campus Registrar.

(b) Changes to registration (add/drop courses) will be permitted only within the prescribed periods at the start of Semesters I and II. (Refer to the Campus Web Site and Notice Boards for actual dates)

(c) A student's registration for a course is complete only after his/her financial obligations to the University have been fulfilled.

19. (a) Registration for any course constitutes registration for the associated examination. A student will therefore have failed the course if s/he does not attend the examination without having previously been allowed to withdraw from the course or without having tendered evidence of illness at the time of the examination, certified by a medical practitioner recognised by the University. **In the latter case, the medical report must reach the Campus Health Service Unit (HSU) no later than seven days after the date of the relevant examination.**

(b) Medical Certificate/Report forms are available online at **http://sta.uwi.edu/onlineForms.asp**

(c) In cases where the medical submitted for a missed coursework examination is approved by the Campus HSU, the candidate shall be granted a substitute coursework examination at a date prescribed by the relevant Department.

(d) In cases where the medical submitted for a missed final examination is approved by the Campus HSU, the grade designation of AM (Absent Medical) will apply provided that the student has passed the coursework in that particular course. The designation AM carries no penalty.

20. (a) A student who has passed a course will not be permitted to re-register for that course.

(b) A student may not be allowed to register for a course on the grounds of repeated failure or poor performance in that course.

K. PROGRESS THROUGH THE PROGRAMME

21. (a) Students admitted to the three-year programme, in addition to registering for the required Level 1 courses, may also register for a **maximum of 12 credits in ONE of the Preliminary** subjects offered (Biology, Chemistry, Mathematics or Physics) for the purpose of obtaining pre-requisites for entry into a programme of choice**. However, the total permissible credit loading per semester must not be exceeded.**

(b) Students may not register for preliminary courses in a subject which overlaps substantially with CAPE/GCE A-Level courses (or equivalent) previously passed.

(c) Full-time students are required to register for Level I Faculty courses equivalent to a MINIMUM of twelve credits, per semester.

(d) Part-time students are required to register for courses equivalent to a MINIMUM of 6 credits per semester.

(e) Evening University students are required to register for courses equivalent to a MINIMUM of 6 credits per semester.

(f) In order to satisfy the minimum requirement for entry to the advanced part of the programme (Level II and III), a student must normally record passes in Level I courses equivalent to a minimum of twenty-four (24) credits of Faculty courses.

(g) A student who has obtained passes in Level I Faculty courses equivalent to twelve (12) credits in the first two (2) semesters of full-time study may, on the approval of the Dean, be allowed to register for a **limited number of Level II courses in addition to those courses required to complete Level I requirements. However, the total credit loading per semester must not be exceeded.**

(h) Full-time students who require **NOT MORE THAN TWENTY (20) CREDITS** in order to graduate, who have satisfied all Foundation course requirements, and are exempted from laboratory coursework in at least one course, may be allowed to register for twenty (20) credits of Faculty courses with the permission of the Dean.

L. STUDY ABROAD/EXCHANGE PROGRAMMES

22. UWI students, while ***at exchange Universities***, will continue as regular full-time students of the University of the West Indies. Such students will pay UWI tuition fees and pursue matching and/or approved courses for credit. Credits earned abroad will be transferred to UWI and applied to regular Faculty degree requirements in accordance with Regulations 47.

23 (a) FST students who wish to participate in an exchange programme at an approved institution and desire to have the credits obtained used toward a UWI degree, must obtain written approval in advance from the Dean and register for equivalent courses offered by FST. **Failure to do so may preclude the acceptance of the credits earned at the exchange institution.**

(b) Students must normally have a minimum Cumulative GPA of 3.0 and have spent at least two semesters of full-time study at UWI to qualify for the Exchange Programme.

(c) Where the course to be taken is to be substituted for a UWI course, the content of the course must be certified in advance by the relevant Department as being equivalent to the UWI course. Course outlines and syllabuses must be provided by the student in order to facilitate the evaluation process.

(d) **Only grades earned at the exchange institution and not the marks shall be used in the computation of the student's GPA.**

Students are advised to visit the website of the Office of Institutional Advancement and Internationalization (International Office) for a current list of Universities with which UWI has entered into cooperative arrangements for study exchanges at **http://sta.uwi.edu/international** or contact:

The Director
Office of Institutional Advancement and Internationalization
The University of the West Indies
St. Augustine Campus
Trinidad and Tobago, W.I.
Tel: 663-3348 Exts. 84184, 84151
Fax: (868) 662- 6930
Skype: uwi-sta-Io
Email: **internationaloffice@sta.uwi.edu**

M. EXAMINATIONS

24. In order to pass a course, a student must have satisfied the examiners in the associated examinations and must have attended at least 75% of classes associated with that course.

25. The Academic Board on the recommendation of the Faculty Board concerned, may debar a student from writing the examination associated with a course, based on attendance of less than 75% of lectures /laboratory classes/tutorials. The designation recorded for such a candidate in that course will be DB (debarred).

26. The examination associated with each course shall be conducted mainly by means of written and/or practical papers, normally taken at the end of the semester. However, oral examinations as well as performance in coursework in the form of essays, in-course tests, research papers, projects, or continuous assessment of theoretical and/or practical work may contribute towards the final grade awarded in a course. (Refer to individual course outlines and the departments for the specific modes of assessment and their weightings)

27. When practical papers and/or practical coursework contribute towards an examination, candidates must satisfy the examiners in both the theoretical and practical aspects of the course (unless specified otherwise). On the basis of performance in the practical part of the course, students may, on the recommendation of the Department concerned, be exempted from the practical part of the final examination.

28. (a) A student may be granted supplemental oral examinations in failed Level II/III courses accounting for **not more than eight (8) credits** provided that the student has completed all level I requirements and passed a minimum of 30 levels II/III credits.

    (b) Students passing such oral examinations will be awarded the minimum pass mark of 40% (Grade D, Quality Point 1.0) and will not have any right of appeal or review of the outcome.

    (c) Students offered oral examinations may choose to decline the offer.

29. A student who fails the examination associated with a course may be given permission to repeat the course and the examination on subsequent occasions.

30. In the event that such a student has satisfied the examiners in the practical coursework component of the failed course, the candidate may, on the recommendation of the relevant Department, be exempted from the laboratory coursework

31. A **Remedial course** in FST offered as part of the Summer School Programme is considered a repeat of the course.

N. PLAGIARISM DECLARATION

32. A declaration must be made In accordance with the University Regulations on Plagiarism (First Degrees, Diplomas and Certificate) and must be attached to all work submitted by a student to be assessed as part of, or the entire requirement of the course, other than work submitted in an invigilated examination. By signing this declaration, a student is declaring that the work submitted is original and that it does not contain any plagiarised material. See Appendix 3 at the back of this booklet for the Plagiarism Declaration and the University's Regulations regarding Plagiarism.

O. GENERAL REQUIREMENTS FOR THE AWARD OF THE DEGREE

33. In order to be eligible for the award of the BSc degree in FST, students must have:

    i been in satisfactory attendance for a period equivalent to at least six (6) semesters of full-time study from entry at Level I

    ii. obtained passes in Levels I, II and III and Foundation Courses amounting to the number of credits shown in TABLE 3

    iii. a minimum Weighted Grade Point Average of 1.00

    iv. the minimum 93 credits required for the award of a BSc General Degree, a MINIMUM of 24 Level I credits of which 12 must be FST credits and at least a major from FST, or

    v. a minimum of two years of full-time study and 60 credits provided that they possess qualifications from another recognised tertiary level institution.

PLEASE NOTE CAREFULLY THAT THE CREDIT REQUIREMENT FOR THE AWARD OF THE BSc DEGREES VARIES DEPENDING UPON THE PROGRAMME YOU ARE PURSUING

34. Students will be granted credits only once for the same course offered under different majors/minors. In such cases students will be required to pursue alternative courses which must be approved by the Dean.

35. Exemptions from specific parts of the degree programme may be obtained under the provision of Regulations 15 and 16.

P. DECLARATION OF MAJORS, MINORS AND SPECIAL OPTIONS

36. (a) Students are required to register for a major/special option upon initial entry into the Faculty. However, students may request a change in major/minor/option as they progress along their degree. Students desirous of pursuing majors in a Faculty other than FST must apply for and obtain official approval from that Faculty before pursuing such majors.

    (b) Students must make a final declaration of their proposed majors/minors/special options by the end of the registration period of the semester in which they intend to graduate.

    (c) Students who have met the requirements for the degree for which they have registered/declared may not register for further courses in pursuit of that degree.

Q. TIME LIMITS FOR COMPLETION AND ENFORCED WITHDRAWALS

37. (a) A Semester grade point average (GPA) based on grades earned on all approved courses for which the student is registered in a semester, will be used as the basis for the determination of his/her academic standing.

    (b) A student whose GPA in any Semester is less than 1.00 will be placed on warning.

    (c) A Dean's Hold will be placed on a student on warning. Such a student will have to seek academic advising from the Dean before the Dean's hold can be removed. This MUST be done within the prescribed registration period at the start of the Semester. A reduced academic load may be recommended.

DEGREE	LEVEL I CREDITS	LEVEL II - III CREDITS	FOUNDATION COURSES CREDITS	TOTAL
BSc (General) with majors/minors	24	60	9	93*
BSc (Special Options):				
BSc Actuarial Science	30	65	9	104
BSc Biology with Specialisations	24	60	9	93
BSc Biomedical Technology	24	60	9	93
BSc Chemistry	24	60	9	93
BSc Chemistry and Management	24	63	9	96
BSc Computer Science	24	60	9	93
BSc Computer Science and Management	30	60	9	99
BSc Environmental Science & Sustainable Technology	24	60	9	93
BSc Information Technology	24	60	9	93
BSc Statistics and Economics	28	62	9	99
** NB: This is the MINIMUM REQUIREMENT and may vary depending upon the credit requirements for the major/minor you are pursuing*				

(d) **A STUDENT WHO IS ON WARNING AND WHO FAILS TO OBTAIN A SEMESTER GPA OF AT LEAST 1.00 IN THE SUCCEEDING SEMESTER WILL BE REQUIRED TO WITHDRAW FROM THE FACULTY.**

38. For the purposes of Regulation 39 below, any semester in which a student is registered part-time, will be counted as half of a semester of full-time study.

39. (a) Full-time students will normally be required to complete the requirements for the degree in a minimum of six or a maximum of ten semesters of full-time study.

(b) Students who do not complete the programme within the maximum period stated In Regulation 39 (a) above will normally be required to withdraw from the Faculty at the end of the academic year in which the maximum time limit is reached.

40. In the event that a student has exhausted the maximum period stated in Regulation 39(a), but still requires for the completion of the degree programme:

(a) passes in courses totaling no more than eight (8) credits,
and/or
(b) passes in Foundation courses only,

approval may be sought from the Board for Undergraduate Studies for an extension of the period of study by one or two consecutive semesters.

41. For the purposes of Regulation 39(a) any semester for which a student has obtained Leave of Absence from the Faculty shall not be counted.

42. A student who was required to withdraw for reasons of failure to progress may be re-admitted to the Faculty on the following conditions:

(a) A minimum of two consecutive semesters has elapsed since the date of withdrawal.

(b) The FST is satisfied that the contributing circumstances for the withdrawal have altered substantially.

(c) All grades previously obtained, (except those for courses that have been deemed outdated), shall continue to apply for the purpose of determining the student's GPA.

(d) Courses pursued in the UWI Summer School during the period of withdrawal shall be included in all relevant grade point average calculations if the student re-enters the Faculty.

43. (a) **A student who was required to withdraw from the Faculty MUST APPLY for re-entry by the date prescribed by the Campus Registrar. A student will not be admitted before a year has elapsed. Application for re-entry must be done prior to the deadline for applications as follows:**

(b) A student who is required to withdraw at the end of Semester I of an academic year must reapply **by 15th December of the following academic year** for readmission in Semester II of that academic year.

(c) A student who is required to withdraw at the end of Semester II or Summer Session of an academic year must reapply **by 30th January of the following academic year** for readmission in Semester I of that academic year.

(d) A student who was required to withdraw and was re-admitted and then required to withdraw for a second time, will not normally be considered for re-admission again until a minimum period of five years has elapsed.

R. LEAVE OF ABSENCE AND VOLUNTARY WITHDRAWAL

44. (a) A student who wishes to be absent from the Faculty for a semester or more may apply for Leave of Absence.

(b) Leave of Absence will not be granted for more than two consecutive semesters in the first instance. However, students may apply for an extension of Leave of Absence.

(c) Leave of Absence will not be granted for more than two consecutive years.

(d) Applications for Leave of Absence should normally be submitted no later than the end of the prescribed change in registration period in the relevant semester.

45. A student who does not register for any course during a semester without having obtained Leave of Absence will be deemed to have withdrawn from the University and will have to re-apply for entry to the University if s/he so desires.

46. A student who voluntarily withdraws from the University and then applies for re-admission within five (5) years shall be granted exemption and credit for all courses previously passed unless the Department concerned declares that the material covered in a course has become outdated. All grades previously obtained except those for courses declared outdated shall be used in the determination of the GPA of such a student.

S. GPA AND CLASS OF DEGREE AWARDED

47. (a) All students in the FST, irrespective of their date of entry into the FST, are subject to the current GPA regulations.

(b) A Cumulative Grade Point Average based on all courses completed for which grades have been obtained (excluding Preliminary courses, those taken on a Pass/Fail basis, audited courses and courses designated I or IP), will be calculated and recorded on the student's transcript.

(c) A Weighted Grade Point Average based on grades obtained on **ALL LEVEL II AND III COURSES** registered for, including all courses in the declared major(s)/minor(s)/option whether passed or failed, will be used in the calculation for determination of the class of the degree. (See Regulations 48 and 49 for the relationship between marks, Grade Point Average and Class of Honours).

(d) First Class Honours, Second Class Honours (Upper and Lower Division), or a Pass degree will be awarded on the basis of the Weighted Grade Point Average (GPA) of all Level II/III courses taken (passed and failed).

T. GRADING SCHEME

48. The Grading Scheme used in the FST is as follows:

Mark	Grade	Quality Points
86-100	A+	4.3
70-85	A	4.0
67-69	A-	3.7
63-66	B+	3.3
60-62	B	3.0
57-59	B-	2.7
53-56	C+	2.3
50-52	C	2.0
47-49	C-	1.7
43-46	D+	1.3
40-42	D	1.0

Minimum pass grade is a D with a quality point of 1.0.

U. CLASS OF HONOURS

49. A student's class of degree will be based on his/her Weighted Grade Point Average (GPA) as follows:

Honours	Weighted GPA
First	3.60 – 4.3
Upper Second	3.0 – 3.59
Lower Second	2.0 – 2.99
Pass	1.0 – 1.99

V. AEGROTAT DEGREE

50. (a) A candidate who, by virtue of illness, was prevented from attending examinations or part of the examinations associated with one or more Level II/III courses in the year of anticipated graduation may apply to the Board for Undergraduate Studies through the University Registrar for an Aegrotat pass in the course. Such an application will only be granted if all the following conditions are satisfied:

i. The relevant Head of Department reports that, on the basis of the candidate's performance during the period preceding the examinations, the candidate was expected to pass the examinations concerned and has satisfactorily completed any associated coursework.

ii. The application reaches the University Registrar not later than thirty (30) days after the date of the last paper in the examination concerned.

iii. The application is accompanied by a medical certificate attesting to the illness and issued by a medical practitioner recognised for this purpose by the University.

(b) No grade will be awarded in respect of an Aegrotat pass, and a candidate, having been awarded an Aegrotat pass, will not be allowed to re-enter the examination for the course concerned on a subsequent occasion. An Aegrotat pass may not be used to satisfy a Prerequisite for other Level II/III courses.

(c) A candidate, having satisfactorily completed the degree programme, who includes Aegrotat passes in courses counted for the degree programme, will be eligible for the award of an Aegrotat degree, provided that both of the following conditions are satisfied:

i. the courses in which the Aegrotat passes have been granted (and which need to be counted towards the award of the degree) are equivalent to no more than twenty-four (24) credits.

ii. no more than sixteen (16) credits mentioned in c (i) above arise from courses making up the candidate's major.

(e) The Aegrotat degree will be awarded without Honours.

SECTION V - REGULATIONS GOVERNING THE FST SUMMER SCHOOL PROGRAMME

The FST generally offers **remedial course**s for students who are repeating laboratory-based and/or non laboratory-based courses during the Summer School. The FST may also offer a limited number of full courses that are non laboratory-based in the Summer School. The maximum number of credits for which a student may register in Summer School is normally nine (9).

1. **ELIGIBILITY FOR ADMISSION TO THE SUMMER SCHOOL PROGRAMME**
   The following categories of students are eligible for admission to the Summer School Programme:
   a. Registered students of the University who have to repeat any of the course(s) offered.

   b. Registered students of the University who have not taken the course(s) previously but fall into one of the following categories:-
      - *Students of the University who have not yet completed the requirements for the degree, diploma or certificate programme for which they are registered.*
      - *Registered UWI students from other UWI campuses.*

   c. Students of the University who have been granted (a) leave of absence for Semester 1 and/ or 2 preceding the Summer School Programmes, or (b) permission to Write "Examinations Only", or (c) who have been asked to withdraw and are desirous of continuing with their programme of study

   d. Other persons, not students of the University, who are eligible to matriculate at either the normal or lower level or as a mature student

2. **APPLICATIONS**
   Please visit the Campus Website for further information.

3. **FEE PAYMENT**
   Students will be required to pay a fee for each course registered for in the Summer School Programme. This fee is subject to change. Please visit the university website for current fees

3. **ATTENDANCE**
   MINIMUM ATTENDANCE of 75% of Lectures/Tutorials is required. Attendance at laboratory classes/field trips is compulsory

4. **COURSE SELECTION AND REGISTRATION**
   Persons desirous of pursuing courses in the Faculty's summer programme are required to visit the website at **http://www.sta.uwi.edu/** or consult the Faculty Notice Boards and timetables for a list of courses being offered in the Summer School Programme before registering.

5. **LATE REGISTRATION**
   a. Students may be permitted to register up to the end of the 2nd week of the start of the Summer School Session on payment of an additional late registration fee of TT$150.

   b. In cases where examination results for Semester II are declared after May 31, students may be permitted to register up to the end of the 2nd week of the start of the Summer School session.

   c. Summer School students may apply for a change of registration by no later than the end of the 2nd week of the start of the Summer School session.

6. **EXAMINATIONS & COURSE LOADS**
   a. Examinations for courses taught in the Summer School shall be conducted in accordance with the University Examination Regulations.

   b. Summer School students shall write the University Examinations appropriate to the course(s) for which they are registered.

   c. Students shall not normally be permitted to register for more than THREE one-semester courses (usually 9 credits) in any given Summer School Session. Students are advised to check the timetable before registering.

   d. Finalising students may apply, to the Faculty Dean to pursue up to a maximum of 12 credits.

   e. A student is deemed as finalising if that student has only a maximum of 12 credits left to complete the degree/certificate/diploma requirement.

f Students may request permission to carry forward coursework marks for courses pursued in Semester I and/or II to the Summer Programme.

g. All such requests must be submitted, through the Faculty Dean, to the Assistant Registrar, Student Affairs (Admissions) before the student is allowed to register.

NOTE: Registration for a course offered in the Summer School implies registration for the examination of that course.

7. **AWARD OF CREDITS**

a. Credits for courses successfully completed in the Summer School shall be granted to registered students of the University including those on approved leave of absence.

b. Persons wishing to pursue a course(s) to be considered as 'Not for Credit" (NFC) must seek approval prior to registering for the course. All such requests must be made, in writing, or on the required form, to the Dean of the Faculty. Students will not subsequently have such credit altered.

c. Summer School students who have not been offered a place at the University have no automatic right of acceptance into any Faculty of the University.

d. Persons who are accepted into the University may be granted credit/exemption for courses successfully completed in the Summer School provided that five (5) yeas have not elapsed since the completion of the relevant course(s).

e. Students who do not satisfy normal matriculation may not use the credits gained in the Summer School for both matriculation and degree purposes.

8. **APPLICATION FOR WITHDRAWAL**

a. Students may withdraw from a course by applying to the Assistant Registrar (Admissions) in writing and copying the Faculty Dean or Summer School Coordinator. The student should clearly state the reasons for the withdrawal and complete the required application form for refund where applicable.

b. Applications for withdrawal from a course must reach the Assistant Registrar (Admissions) no later than two (2) weeks after teaching has begun. Students, who wish to withdraw from a course after the deadline date, must apply to Academic Board, through their respective Faculty Office.

9. **REFUND POLICY**

a. A refund penalty is charged as follows:
   i. No penalty before May 30th, 2014
   ii. 25% of tuition fees up to June 2, 2014 (up to the end the 1st week of teaching)
   iii. 30% of tuition fees up to June 9, 2014 (up to the end of the 2nd week of teaching)

10. **PAYMENT OF FEES**

a. Part payment of fees is NOT allowed

b. Fees must be paid at any Branch of Republic Bank Ltd. using the bank deposit slip provided

c. Registration in the summer session will carry a non-refundable registration fee

d. Courses not dropped by the deadline date will be counted and the student would be billed accordingly.

e. Late registration fee/late payment penalty includes the registration fee PLUS the Late Registration fee/late payment penalty.

SECTION VI - PRIZES

A number of prizes are offered on an annual basis to students in the Faculty based on outstanding academic performance. The following is a list of such prizes. Note that this list is subject to alteration.

FACULTY PRIZES

These prizes are awarded to all First Class Honours students within the Faculty by the Office of the Dean.

DEPARTMENT OF CHEMISTRY

THE WESTERN SCIENTIFIC PRIZE
Awarded for the best Year I performance in Chemistry

THE BERGER PAINTS TRINIDAD LTD. PRIZE
Awarded for the best Year II performance in Chemistry

THE CHROMASPEC LTD. PRIZE
Awarded for the best Year II performance in Chemistry & Management

THE INDUSTRIAL GASES LTD. PRIZE
Awarded for the best Year III performance in Chemistry

THE SOUTHERN SYSTEMS LTD. PRIZE
Awarded for the best graduating student in Chemistry

THE PERKIN ELMER/SCALAR SCIENTIFIC PRIZE
Awarded for the best performance in Analytical Chemistry

THE WESTERN SCIENTIFIC PRIZE
Awarded for the best Year III performance in Chemistry & Management

THE CHERYL BOWLES CHALLENGE TROPHY PRIZE
Awarded for the best Final Year Analytical Chemistry Project

THE ANIL DEISINGH PRIZE
Awarded for the best Graduating Student entering the Chemistry Postgraduate Programme

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

THE IBM WORLD TRADE CORPORATION PRIZE
Awarded for the best Year I performance in Computer Science

MINDBASE CONSULTING LTD. PRIZE
Awarded for the best Year I performance in Information Technology

THE TUCKER ENERGY SERVICES HOLDINGS LTD. PRIZE
Awarded for the best Year II performance in Computer Science

THE RBC ROYAL BANK OF TRINIDAD & TOBAGO LTD. PRIZE
Awarded for the best Year II performance in Information Technology

THE FUJITSU TRANSACTION SOLUTION LIMITED PRIZE
Awarded for the best Year III performance in Computer Science

THE DIGI DATA SYSTEMS LTD. PRIZE
Awarded for the best Year III performance in Information Technology

ATLANTIC CO. OF TRINIDAD AND TOBAGO PRIZE
Awarded to the most outstanding graduate: B.Sc. General (Major in Computer Science)

DR MARGARET BERNARD MEDULLAN AWARD
Awarded to the graduate in Computer Science with the highest GPA

DEPARTMENT OF LIFE SCIENCES

PLANT SCIENCE

THE PROFESSOR E.J. DUNCAN PRIZE
Awarded for the best Research Project in Plant Science

BIOCHEMISTRY

THE BRYDEN PI CARIBBEAN PRIZE
Awarded for the best Year II performance by a student majoring in Biochemistry

THE ANGOSTURA LIMITED PRIZE
Awarded for the best Year III performance by a student majoring in Biochemistry

BIOLOGY

THE REPUBLIC BANK LTD. PRIZE
Awarded for the best Year I performance in Biology

THE NEAL AND MASSY PRIZE
Awarded for the best Year II performance in Biology

THE NEAL AND MASSY PRIZE
Awarded for the best Year III performance in Biology

THE SEETERRAM BOOK CENTRE PRIZE
Awarded for the best overall performance in Biology – Book Voucher Prize

ENVIRONMENTAL & NATURAL RESOURCE MANAGEMENT

THE ASA WRIGHT NATURE CENTRE-JULIAN DUNCAN PRIZE
Awarded for the best Year I performance in Environmental & Natural Resource Management

THE ASA WRIGHT NATURE CENTRE - THOMAS CARR PRIZE
Awarded for the best Year II performance in Environmental & Natural Resource Management

THE ASA WRIGHT NATURE CENTRE – IAN LAMBIE PRIZE
Awarded for the best Year III performance in Environmental & Natural Resource Management

THE ENVIRONMENTAL MANAGEMENT AUTHORITY (EMA) PRIZE
Awarded for the Best Research Project

SPECIAL PRIZE:
THE JULIAN KENNY PRIZE IN NATURAL HISTORY
Awarded to the final year undergraduate student majoring in a Life Science discipline and displaying a strong interest in Natural History

DEPARTMENT OF MATHEMATICS & STATISTICS

THE POWERGEN PRIZE
Awarded for the best Year I performance in Mathematics

THE GUARDIAN LIFE OF TRINIDAD & TOBAGO PRIZE
Awarded for the best Year II performance in Mathematics

THE TATIL GROUP PRIZE
Awarded for the best Year III performance in Mathematics

THE WINSTON A. RICHARDS PRIZE IN STATISTICS
Awarded for the best Year II and Year III performance in Statistics

DEPARTMENT OF PHYSICS

THE RUSSELL BARROW MEMORIAL PRIZE IN ASTRONOMY
Awarded to the student showing the most initiative and effort in Astronomy outside the formal classroom

THE VICAR ENTERPRISES LIMITED PRIZE
Awarded for the best Year I performance in Physics

THE AZAD W. HARRIPAUL PRIZE
Awarded to the student with the highest marks in the level II of the programme for the course PHYS 2159

THE BERGER PAINTS TRINIDAD LTD. PRIZE
Awarded for the best Year II performance in Physics

THE DEVA SHARMA PRIZE
Awarded for the best performance by a female student graduating with a major in Physics

THE P.C.S. NITROGEN PRIZE
Awarded for the best Year II performance in Materials Science

THE ANTHONY CAMPBELL MEMORIAL AWARD
Awarded for the best performance in the Physics Major Research Project
THE TRINIDAD AGGREGATE PRODUCTS PRIZE
Awarded for the best performance in Ceramics Science

THE CARIRI PRIZE
Awarded for the best Year III performance in Materials Science

THE BRUNO MITCHELL PRIZE
Awarded for the best performance in Astrophysics Course
DIAGNOSTIC NUCLEAR MEDICINE LTD. PRIZE
Awarded to the most outstanding student in Advanced Medical Physics & Bioengineering (PHYS 2160)

SECTION VII - PROGRAMME OUTLINES

DEPARTMENT OF CHEMISTRY

List of Courses Offered in the Department of Chemistry for the 2013/2014 academic year.

COURSE LISTING

SEMESTER 1

Course Code	Course Title	Credits
CHEM 0060	Preliminary Chemistry I	0
CHEM 1062	Basic Chemistry for Life Sciences	3
CHEM 1065	Introduction to Chemistry Laboratory	3
CHEM 1066	Introduction to Chemistry I	3
CHEM 2025	Kinetics & Mechanism	4
CHEM 2160	Main Group Chemistry *(Remedial Only)*	4
CHEM 2260	Basic Organic Chemistry I *(Remedial Only)*	4
CHEM 2360	Basic Physical Chemistry *(Remedial Only)*	4
CHEM 3162	Chemistry of Metal-Catalyzed Transformations	3
CHEM 3267	Basic Organic Chemistry II	3
CHEM 3268	Chemistry of Natural Products	3
CHEM 3467	Basic Analytical Chemistry	6
CHEM 3560	Environmental Chemistry	4
CHEM 3561	Introduction to Polymer Chemistry	4
CHEM 3660	Research Project	4

New courses introduced for 2013/14

CHEM 2170	Fundamentals of Inorganic Chemistry I	3
CHEM 2270	Organic Chemistry I	3
CHEM 2370	Physical Chemistry I	3
CHEM 2470	Introduction to Analytical Chemistry	3
CHEM 2670	Advanced Chemistry Laboratory I	1.5
CHEM 2770	Introduction into Research in Chemistry Learning *(Elective)*	3
CHEM 3870	Principles of Chemical Biology *(Elective)*	3

SEMESTER 2

Course Code	Course Title	Credits
CHEM 0061	Preliminary Chemistry II	0
CHEM 1067	Introduction to Chemistry II	3
CHEM 1068	Introduction to Chemistry III	3
CHEM 2015	Spectroscopy (Remedial Only)	4
CHEM 2460	Principles of Chemical Analysis *(Remedial Only)*	4
CHEM 3163	Chemistry of Technologically Important Materials	3
CHEM 3167	Advanced Inorganic Chemistry	3
CHEM 3269	Organic Synthesis	3
CHEM 3367	Thermodynamics & Statistical Thermodynamics	3
CHEM 3468	Advanced Analytical Chemistry	6
CHEM 3562	Corrosion Science	4
CHEM 3569	Industrial Chemistry I	4
CHEM 3660	Research Project	4

New courses introduced for 2013/14

CHEM 2471	Analytical Methods in Chemistry	3
CHEM 2472	Analytical Chemistry Laboratory	3
CHEM 2671	Advanced Chemistry Laboratory II	1.5
CHEM 3170	Fundamentals of Inorganic Chemistry II	3
CHEM 3270	Organic Chemistry II	3
CHEM 3370	Physical Chemistry II	3

Please note:

I. Preliminary Chemistry I (CHEM 0060) and II (CHEM 0061) are taught by The Open Campus. These courses are not counted towards a student's credit requirements for the BSc degree. However they can be used as pre-requisites for other courses/ programmes.

II. a. Basic Chemistry for Life Sciences (CHEM 1062) is offered for students who have little exposure to Chemistry and intend to pursue studies in Agriculture, Human Ecology or the Life Sciences.

b. **CHEM 1062 cannot be done in conjunction with CHEM 1060 and/or CHEM 1061 or CHEM 1065, CHEM 1066, CHEM 1067 and CHEM 1068 or CHEM 0060 and CHEM 0061.**

III. Students who have already passed Chemistry at CAPE (Units 1 and 2), GCE A-Level or Preliminary Chemistry (CHEM 0060 and CHEM 0061) or equivalent at UWI will be exempted from CHEM 1062 (Basic Chemistry for Life Sciences).

IV. For all Preliminary, Level I and Level II Chemistry courses (unless otherwise stated) practical work will be assessed throughout the semester and will contribute to the candidate's final mark.

a. N.B. Students will be debarred from writing the final examination if they have not attended, completed and handed in lab reports for at least 75% of the laboratory experiments.

V The courses CHEM 3560 (Environmental Chemistry) and CHEM 3569 (Industrial Chemistry) have restricted enrollment. Entry into these courses is highly competitive and selection will be based on students' academic records. Students interested in pursuing these courses are required to complete an application form, available from the Chemistry General Office, the semester before the course is due to run.

VI. Students wishing to pursue the new Analytical Minor in 2013/14 will be required to complete an application form available from the Chemistry General Office.

INTRODUCTION OF THE NEW CHEMISTRY PROGRAMME – 2013/2014

In 2012/2013 the Department of Chemistry introduced a new Level I programme consisting of CHEM 1065, CHEM 1066, CHEM 1067 and CHEM 1068. This was the first phase of the introduction of the new Chemistry curriculum. Beginning September 2013, the Department will be introducing for the first time a BSc degree in Chemistry as well as the completely revised Major in Chemistry and Minors in Analytical Chemistry and Chemistry.

A. Students Entering Level II in 2013/2014

Students who have completed Level I can therefore proceed in Chemistry by choosing from the following programmes as appropriate.

(i) Major in Chemistry (revised)
(ii) Minor in Chemistry (revised)
(iii) Minor in Analytical Chemistry (revised)
(iv) BSc in Chemistry (new programme)

Major in Chemistry (New)

(From September 2013)
(30 Credits)

The new major will require the following courses amounting to 30 credits over Level II and Level III as follows. All the core courses and some of the electives are either new or have been substantially revised.

COURSE OUTLINE

LEVEL I
SEMESTER 1

Course Code	Course Title	Credits
CHEM 1065	Introduction to Chemistry Laboratory	3
CHEM 1066	Introduction to Chemistry I	3

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
CHEM 1067	Introduction to Chemistry II	3
CHEM 1068	Introduction to Chemistry III	3

CORE COURSES

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
CHEM 2170**	Fundamentals of Inorganic Chemistry I	3
CHEM 2270**	Organic Chemistry I	3
CHEM 2370**	Physical Chemistry I	3
CHEM 2470**	Introduction to Analytical Chemistry	3
CHEM 2670	Advanced Chemistry Laboratory I	1.5

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
CHEM 2671	Advanced Chemistry Laboratory II	1.5

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
CHEM 3170**	Fundamentals of Inorganic Chemistry II	3
CHEM 3270**	Organic Chemistry II	3
CHEM 3370**	Physical Chemistry II	3
PLUS		
One Chemistry Elective*		3

(See List of Electives (List 2) on Page 40)

LEVEL III
(Not available until 2014/2015)
SEMESTER 1 OR 2

Course Code	Course Title	Credits
CHEM 3670	Chemistry Structured Project	3

* **Students may need to do this course either in Semester I OR Semester II**

** **This course can be done either at Level II or III**

Minor in Chemistry (New)

(From September 2013)
(15 Credits)

CORE COURSES

LEVEL II
SEMESTER 1

Course Code	Course Title	Credits
CHEM 2470	Introduction to Analytical Chemistry	3
CHEM 2670	Advanced Chemistry Laboratory I	1.5

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
CHEM 2671	Advanced Chemistry Laboratory II	1.5

LEVEL II/III
(Courses can be done either at Level II or III)
SEMESTER 1

Course Code	Course Title	Credits
CHEM 2170	Fundamentals of Inorganic Chemistry I	3
CHEM 2270	Organic Chemistry I	3
CHEM 2370	Physical Chemistry I	3

The Minor in Analytical Chemistry (New)

(From September 2013)
(15 Credits)

Students pursuing the Minor or Major or BSc in Chemistry can register for this Analytical Chemistry Minor and will complete 15 credits of courses as outlined below.

Students wishing to pursue the new Analytical Chemistry Minor in 2013/2014 will be required to complete an **application form** available from the Chemistry General Office.

COURSE OUTLINE

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
	Elective **	3

CORE COURSES

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
CHEM 2471	Analytical Methods in Chemistry	3
CHEM 2472	Advanced Analytical Laboratory	3

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
	Elective **	3

CORE COURSES

(Not available until 2014/2015)
LEVEL III
SEMESTER 1

Course Code	Course Title	Credits
CHEM 3470	Analytical Methods in Chemistry II	3

** **These electives must be chosen from the following: CHEM 3560, CHEM 3561, CHEM 3562, CHEM 3569, CHEM 3870, MATH 2190, AGBU 2003 and AGRI 3000.**

BSc in Chemistry (New)

(New Programme from September 2013)
(93 Credits)

In addition to the Level I Chemistry courses (12 credits), students pursuing the BSc in Chemistry will require passes in CAPE Mathematics Units 1 and 2 or MATH 1115 and MATH 1125 or equivalent. However, students who have passed CAPE Mathematics Units 1 and 2 will then be required to pursue any other four (4) Level I Faculty courses (at least 3 credits each) in order to satisfy the minimum Level I requirements of 24 credits. Also note carefully, the students who need to read MATH 1115 and MATH 1125 (3 credits each) will be required to complete any other two (2) Level I Faculty credits (at least 3 credits each) in order to fulfil the minimum Level I requirements.

At Level II they will complete the courses required for a major in Chemistry and at Level III will pursue eighteen (18) credits of required advanced core courses in Chemistry and a further twelve credits of approved electives thus completing a total of sixty (60) credits of advanced courses. The full programme at the advanced level is outlined below.

LEVEL I
SEMESTER 1 (12 credits)

Course Code	Course Title	Credits
CHEM 1065	Introduction to Chemistry Laboratory	3
CHEM 1066	Introduction to Chemistry I	3
MATH 1115 ***	Fundamental Mathematics for the General Sciences I	3

***** For students without CAPE/GCE A-Level Mathematics or equivalent.**

LEVEL II
SEMESTER 2 (12 credits)

Course Code	Course Title	Credits
CHEM 1067	Introduction to Chemistry II	3
CHEM 1068	Introduction to Chemistry III	3
MATH 1125 ***	Fundamental Mathematics for the General Sciences II	3

***** For students without CAPE/GCE A-Level Mathematics or equivalent.**

CORE COURSES

LEVEL II
SEMESTER 1

Course Code	Course Title	Credits
CHEM 2170	Fundamentals of Inorganic Chemistry I	3
CHEM 2270	Organic Chemistry I	3
CHEM 2370	Physical Chemistry I	3
CHEM 2470	Introduction to Analytical Chemistry	3
CHEM 2670	Advanced Chemistry Laboratory I	1.5

AND
One Chemistry Elective 3 or 4
(See List of Electives (List 2) on Page 39)

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
CHEM 3370	Physical Chemistry II	3
CHEM 2671	Advanced Chemistry Laboratory II	1.5
CHEM 3170	Fundamentals of Inorganic Chemistry II	3
CHEM 3270	Organic Chemistry II	3

AND
One Chemistry Elective 3 or 4
(See List of Electives (List 2) on Page 39)

LEVEL III *(Courses not available until 2014/2015)*
SEMESTER 1

Course Code	Course Title	Credits
CHEM 3172	Advanced Inorganic Chemistry	3
CHEM 3373	Advanced Physical Chemistry	3
CHEM 3670	Chemistry Project I	3
	Approved Elective #	3
	Approved Elective #	3

LEVEL II *Courses not available until 2014/2015)*
SEMESTER 2

Course Code	Course Title	Credits
CHEM 3273	Advanced Organic Chemistry	3
CHEM 3573	Advanced Topics	3
CHEM 3671	Chemistry Project II	3
	Approved Elective #	3
	Approved Elective #	3

 # These may be chosen from courses within or outside the Department. For those courses outside the Faculty of Science and Technology, students must seek approval from the Head of Department.

B. Students Entering or Completing Level III in 2013/2014

For 2013/2014, the current Level III programme will remain intact and students who have completed the old Level II programme will continue to Level III and will be able to do all the core and elective courses according to their expectations and along with students who have not completed current required Level III courses will be able to complete the Chemistry Major or Minors and the Chemistry and Management Programme as advertised in the 2012/2013 FST booklet.

C. Students who have Not Completed the Old Level II

Students who are trailing one or two of the old level II courses will be advised as to the courses which would constitute the best option for proceeding to the Major or Minor in Chemistry for which they have registered. Students who have failed all the old Level II courses or still require more than three of these courses will be asked to continue in the new Chemistry Major or Minor programme. **Please seek academic advising to ensure that you are proceeding correctly with your degree programme.**

Major in Chemistry *(Prior to 2013/2014)*

(33 CREDITS)

COURSE LISTING

PREREQUISITE LEVEL I COURSES

LEVEL I
SEMESTER 1

Course Code	Course Title	Credits
CHEM 1060 ##	Introductory Chemistry I	6
CHEM 1061 ##	Introductory Chemistry II	6
OR		
CHEM 1065	Introduction to Chemistry Laboratory	3
CHEM 1066	Introduction to Chemistry I	3

Discontinued w.e.f. 2012/2013

LEVEL I
SEMESTER 2

Course Code	Course Title	Credits
CHEM 1067	Introduction to Chemistry II	3
CHEM 1068	Introduction to Chemistry III	3

CORE COURSES

LEVEL II
SEMESTER 1

Course Code	Course Title	Credits
CHEM 2025	Kinetics & Mechanism	4
CHEM 2160	Main Group Chemistry	4
CHEM 2360	Basic Physical Chemistry	4

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
CHEM 2015	Spectroscopy	4
CHEM 2260	Basic Organic Chemistry I (Moved to Semester I for 2013/2014)	4

LEVEL III
SEMESTER 1 OR 2

Course Code	Course Title	Credits
CHEM 3660	Research Project	4

PLUS

(i) Either nine (9) credits of Level III courses from List 1

LIST 1
SEMESTER 1

Course Code	Course Title	Credits
CHEM 3267	Basic Organic Chemistry II	3

SEMESTER 2

Course Code	Course Title	Credits
CHEM 3167	Advanced Inorganic Chemistry	3
CHEM 3367	Thermodynamics & Statistical Thermodynamics	3

(ii) OR any six (6) credits from List 1 above AND at least three (3) credits from List 2 below

LIST 2

ELECTIVES

The following electives are also offered by the Department

SEMESTER 1

Course Code	Course Title	Credits
CHEM 2770	Introduction to Research in Chemistry Learning (New)	3
CHEM 3162	Chemistry of Metal-Catalyzed Transformations	3
CHEM 3268	Chemistry of Natural Products	3
CHEM 3467	Basic Analytical Chemistry	6
CHEM 3560	Environmental Chemistry	4
CHEM 3561	Introduction to Polymer Chemistry	4
CHEM 3870	Principles of Chemical Biology *(New)*	3

SEMESTER 2

Course Code	Course Title	Credits
CHEM 3163	Chemistry of Technologically Important Materials	3
CHEM 3269	Organic Synthesis	3
CHEM 3468	Advanced Analytical Chemistry	6
CHEM 3562	Corrosion Science	4
CHEM 3569	Industrial Chemistry I	4

Minor in Chemistry *(Prior to 2013/2014)*

(16 CREDITS)

COURSE LISTING

CORE COURSES (12 CREDITS)

LEVEL II
SEMESTER 1

Course Code	Course Title	Credits
CHEM 2160	Main Group Chemistry	4
CHEM 2360	Basic Physical Chemistry	4

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
CHEM 2260	Basic Organic Chemistry I (Moved to Semester I for 2013/2014)	4

ELECTIVES (4 CREDITS)

One course from the following:

LEVEL II
SEMESTER 1

Course Code	Course Title	Credits
CHEM 2025	Kinetics & Mechanism	4

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
CHEM 2015	Spectroscopy	4

Minor in Analytical Chemistry *(Prior to 2013/2014)*

(16 CREDITS)

Chemistry Majors can also pursue a minor in Analytical Chemistry by taking the following additional courses. For these students, only one Research Project CHEM 3660 will be required (see MAJOR IN CHEMISTRY). **PLEASE NOTE THAT A MINOR IN ANALYTICAL CHEMISTRY CAN ONLY BE PURSUED IN CONJUCTION WITH THE MAJOR IN CHEMISTRY.**

COURSE LISTING

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
CHEM 2460	Principles of Chemical Analysis	4

LEVEL III
SEMESTER 1

Course Code	Course Title	Credits
CHEM 3467	Basic Analytical Chemistry	6

LEVEL III
SEMESTER 2

Course Code	Course Title	Credits
CHEM 3468	Advanced Analytical Chemistry	6

Minor in Applied Chemistry *(Remains the same for 2013/2014)*

(16 CREDITS)

Chemistry majors can also pursue a minor in Applied Chemistry by pursuing the following additional courses.

PLEASE NOTE THAT A MINOR IN APPLIED CHEMISTRY CAN ONLY BE PURSUED IN CONJUCTION WITH THE MAJOR IN CHEMISTRY.

COURSE LISTING

LEVEL III
SEMESTER 1

Course Code	Course Title	Credits
CHEM 3560	Environmental Chemistry	4
CHEM 3561	Introduction to Polymer Chemistry	4

SEMESTER 2

Course Code	Course Title	Credits
CHEM 3562	Corrosion Science	4
CHEM 3569	Industrial Chemistry I	4

BSc Chemistry and Management *(NEW – for students entering Level II in 2013/2014)*

(PLEASE SEE APPENDIX 1 which outlines the specific prerequisites for the Management courses pursued by Chemistry and Management students.)

The Department will be introducing a revised major in Chemistry in 2013/2014. Therefore, the students who will be entering Level II of the Chemistry and Management Programme in 2013/2014 will be required to pursue Chemistry courses amounting to 30 credits over Level II and Level III. All the core courses and some of the electives are either new or have been substantially revised.

COURSE LISTING

(A) LEVEL I
SEMESTER 1

Course Code	Course Title	Credits
ACCT 1002	Introduction to Financial Accounting	3
CHEM 1060##	Introductory Chemistry I	6
CHEM 1061##	Introductory Chemistry II	6
0R		
CHEM 1065	Introduction to Chemistry Laboratory	3
CHEM 1066	Introduction to Chemistry I	3
ECON 1001	Introduction to Economics I	3
ECON 1005	Introduction to Statistics	3

##Discontinued w.e.f. 2012/2013

SEMESTER 2

Course Code	Course Title	Credits
ACCT 1003	Introduction to Cost and Management Accounting	3
CHEM 1067	Introduction to Chemistry II	3
CHEM 1068	Introduction to Chemistry III	3

TOTAL LEVEL I CREDITS 24

(B) CHEMISTRY ADVANCED COURSES
(30 Credits)

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
CHEM 2170**	Fundamentals of Inorganic Chemistry I	3
CHEM 2270**	Organic Chemistry I	3
CHEM 2370**	Physical Chemistry I	3
CHEM 2470**	Introduction to Analytical Chemistry	3
CHEM 2670	Advanced Chemistry Laboratory I	1.5

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
CHEM 2671	Advanced Chemistry Laboratory II	1.5

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
CHEM 3170 **	Fundamentals of Inorganic Chemistry II	3
CHEM 3270**	Organic Chemistry II	3
CHEM 3370**	Physical Chemistry II	3
	One Chemistry Elective*	
	3(See List of Electives (List 2) on Page 39)	

LEVEL III *(Not available until 2014/2015)*
SEMESTER 1 OR 2

Course Code	Course Title	Credits
CHEM 3670	Chemistry Structured Project	3

* **Students may need to do this course either in Semester I OR Semester II**
** **This course can be done either at Level II or III**

(C) MANAGEMENT ADVANCED COURSES

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
MGMT 2012	Quantitative Methods	3
MGMT 2021***	Business Law	3
MGMT 2023	Financial Management	3

SEMESTER 2

Course Code	Course Title	Credits
MGMT 2003	Principles of Marketing	3
MGMT 2008	Organisational Behaviour	3
MGMT 2032	Managerial Economics	3

LEVEL III
SEMESTER 1

Course Code	Course Title	Credits
MGMT 3057	Production and Operations	3

SEMESTER 2

Course Code	Course Title	Credits
MGMT 3060	Operations Planning and Control	3

*** **MGMT 2021 – Business Law can be done in Level III in order to reduce course loading at Level II.**

(D) IN ADDITION
Six (6) credits of level II/III Management courses selected from the following:

MANAGEMENT ELECTIVES:
SEMESTER 1

Course Code	Course Title	Credits
MKTG 3000	Marketing Management	3
MGMT 3017	Human Resource Management	3
MGMT 2006	Management Information Systems I	3

SEMESTER 2

Course Code	Course Title	Credits
MKTG 3007	Marketing Planning	3

Students may also select 6 credits of Management courses from any Level II/III Management courses offered in the Summer.

TOTAL LEVEL II/III Chemistry and Management CREDITS: 60

(E) NINE (9) CREDITS OF FOUNDATION COURSES:

SEMESTER 1 AND 2

Course Code	Course Title	Credits
FOUN 1101	Caribbean Civilisation	3
FOUN 1301	Law, Governance, Economy and Society	3

SEMESTER 2

Course Code	Course Title	Credits
FOUN 1102	Academic Writing for Different Disciplines (Option C)	3

TOTAL DEGREE CREDITS REQUIREMENTS: 93

BSc Chemistry and Management
(OLD – for students who have completed courses for Level I and II prior to 2013/2014)

The course requirements for the BSc Chemistry and Management are as follows:

(PLEASE SEE APPENDIX 1 which outlines the specific prerequisites for the Management courses pursued by Chemistry and Management students.)

COURSE LISTING

(A) LEVEL I
SEMESTER 1

Course Code	Course Title	Credits
ACCT 1002	Introduction to Financial Accounting	3
CHEM 1060##	Introductory Chemistry I	6
CHEM 1061##	Introductory Chemistry II	6
OR		
CHEM 1065	Introduction to Chemistry Laboratory	3
CHEM 1066	Introduction to Chemistry I	3
ECON 1001	Introduction to Economics I	3
ECON 1005	Introduction to Statistics	3

##Discontinued w.e.f. 2012/2013

SEMESTER 2

Course Code	Course Title	Credits
ACCT 1003	Introduction to Cost and Management Accounting	3
CHEM 1067	Introduction to Chemistry II	3
CHEM 1068	Introduction to Chemistry III	3

TOTAL LEVEL I CREDITS (30)/24

(B) LEVEL II
SEMESTER 1

Course Code	Course Title	Credits
CHEM 2160	Main Group Chemistry	4
CHEM 2360	Physical Chemistry	4
CHEM 2025	Kinetics & Mechanism	4
MGMT 2012	Quantitative Methods	3
MGMT 2021	Business Law	3
MGMT 2023	Financial Management	3

SEMESTER 2

Course Code	Course Title	Credits
CHEM 2260	Organic Chemistry (Moved to Semester I for 2013/2014)	4
CHEM 2015	Spectroscopy	4
MGMT 2003	Principles of Marketing	3
MGMT 2008	Organisational Behaviour	3
MGMT 2032	Managerial Economics	3

(C) LEVEL III - MANAGEMENT COURSES

SEMESTER 1

Course Code	Course Title	Credits
MGMT 3057	Production and Operations	3

SEMESTER 2

Course Code	Course Title	Credits
MGMT 3060	Operations Planning and Control	3

(D) LEVEL III - CHEMISTRY COURSES

SEMESTER 1 OR 2

Course Code	Course Title	Credits
CHEM 3660	Research Project	4

PLUS

(i) Either nine (9) credits of Level III courses from List 1

LIST 1

SEMESTER 1

Course Code	Course Title	Credits
CHEM 3267	Basic Organic Chemistry II	3

SEMESTER 2

Course Code	Course Title	Credits
CHEM 3167	Advanced Inorganic Chemistry	3
CHEM 3367	Thermodynamics & Statistical Thermodynamics	3

(ii) OR alternatively any six (6) credits from List 1 above AND at least three (3) credits from List 2 (Electives) - see page .

(E) IN ADDITION

Six (6) credits of level II/III Management courses selected from the following:

MANAGEMENT ELECTIVES:

SEMESTER 1

Course Code	Course Title	Credits
MKTG 3000	Marketing Management	3
MGMT 3017	Human Resource Management	3
MGMT 2006	Management Information Systems I	3

SEMESTER 2

Course Code	Course Title	Credits
MKTG 3007	Marketing Planning	3

Students may also select 6 credits of Management courses from any level II/III management courses offered in the Summer.

(F) NINE (9) CREDITS OF FOUNDATION COURSES:

SEMESTER 1 AND 2

Course Code	Course Title	Credits
FOUN 1101	Caribbean Civilisation	3
FOUN 1301	Law, Governance, Economy and Society	3

SEMESTER 2

Course Code	Course Title	Credits
FOUN 1102	Academic Writing for Different Disciplines (Option C)	3

TOTAL DEGREE CREDITS REQUIREMENTS: 96

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

For further Information please visit DCIT website:
http://sta.uwi.edu/fst/dcit/

Please note:

i. Students majoring in Computer Science and those registered in the BSc Computer Science and Management, /BSc Information Technology and BSc Computer Science (Special) must seek the approval of the Department to read Computing, Information Technology/Systems courses outside of the FST.

Course Equivalencies **:** There is substantial overlap in the courses listed hereunder. However, **students pursuing Computer Science courses WOULD NOT BE GIVEN credits for the equivalent Information Technology courses and vice versa**.

Transfer students who pursued the equivalent Computer Science course would be exempted WITHOUT credits from the relevant Information Technology course as listed hereunder.

COMP COURSES		***INFO COURSES***	
Course Code	**Credits**	**Course Code**	**Credits**
MATH 1140	6	INFO 1415	6
COMP1100	6	INFO 1420	6
COMP 1200	6	INFO2420	4
COMP 2000	4	INFO 2410	4
COMP 2100	4	INFO 2405	4
COMP 2200	4	INFO 2425	4
COMP 2300	4	INFO 2430	4
COMP 2400	4	INFO 2400	4
COMP 2700	4	INFO 2415	4
COMP 3750	4	INFO 3430	4
COMP 3990	4	INFO 3490	4

ii. **REGULATION REGARDING FAIL THEORY IN FINAL EXAMINATIONS FOR ALL COMPUTER SCIENCE AND INFORMATION TECHNOLOGY COURSES:**
Students must make a minimum of 40% in the final examination to obtain a PASS Grade. Students who have an overall mark of 40% or more but less than 40% in the Final Examination will be deemed to have failed the examination.

iii. **INTERNSHIP PROGRAMME FOR UNDERGRADUATE STUDENTS IN COMPUTER SCIENCE/INFORMATION TECHNOLOGY**
The Department offers an optional internship programme for second year students majoring in Computer Science or pursuing the BSc Computer Science and Management, BSc Information Technology and BSc Computer Science (Special) degrees. This programme will be helpful in:
- Providing practical training to the students during their degree programme;
- Providing experience in the working environment, and
- Preparing for future jobs.

iv **TRANSFER OF COURSEWORK MARKS**
The Department does NOT carry forward coursework marks for their courses (COMP or INFO).

COURSE LISTING

List of Courses Offered in the Department of Computing & Information Technology for the 2013/2014 academic year.
KEY:

Students Majoring in Computer Science or Information Technology will not be credited for COMP 1011.

***** INFO courses also offered to students in the Evening University (EU) Programme.

N.B. Evening University (EU) Programme not offered to new students w.e.f. 2013/2014 Academic Year.

SEMESTER 1

Course Code	**Course Title**	**Credits**
COMP 1011	Introduction to Information Technology #	3
COMP 1400	Programming I	3
COMP 1401	Introduction to Computer Science Concepts I	3
COMP 1402	Computer Science Mathematics I	3
COMP 1403	Introduction to Web Programming	3
COMP 1404	Programming II	3
COMP 1405	Programming III	3
COMP 2000	Data Structures	4
COMP 2200	Computer Architecture	4
COMP 2700	Database Management Systems I	4
COMP 3100	Operating Systems	4
COMP 3150	Computer Networks	4
COMP 3550	Internet Technologies II	4
COMP 3850	Intelligent Systems	4
COMP3900	Special Topics in Computer Science (Game Programming)	4
INFO 1500	Introduction to Information Technology Fundamentals	3
INFO 1501	Introduction to WWW Programming	3
INFO 1502	Introduction to Problem Solving	3
INFO 1503	Introduction to Mathematics for Critical Thinking	3
INFO 2415	Enterprise Database Systems *	4

INFO 2420	Programming Fundamentals II *	4
INFO 2425	Computer Architecture *	4
INFO 2430	Business Information Systems	4
INFO 2500	Networking Technologies Fundamentals*	4
INFO 3400	Fundamentals of Operating Systems *	4
INFO 3415	Information Assurance and Security *	4
INFO 3440	Software Engineering	4

SEMESTER 2

Course Code	Course Title	Credits
COMP 1011	Introduction to Information Technology #	3
COMP1400	Programming I	3
COMP 1402	Comouter Science Mathematics I	3
COMP 1404	Programming II	3
COMP 1405	Programming III	3
COMP 1406	Computer Science Mathematics II	3
COMP 1407	Introduction to Computer Science Concepts II	3
COMP 2000	Data Structures	4
COMP 2100	Discrete Mathematics for Computer Science	4
COMP 2300	Programming for Business Applications	4
COMP 2500	Object-Oriented Programming	4
COMP 3000	Design and Analysis of Algorithms	4
COMP 3250	Software Engineering	4
COMP 3275	Wireless and Mobile Computing	4
COMP 3700	Database Management Systems II	4
COMP 3950	Modelling and Simulation	4
INFO 1504	Introduction to Programming Fundamentals I	3
INFO 1505	Introduction to Computer Systems	3
INFO 1506	Introduction to Information and Data Management	3
INFO 1507	Introduction to Business Principles	3
INFO 2400	Information Systems Development *	4
INFO 2405	Discrete Mathematics *	4
INFO 2410	Fundamental Data Structures *	4
INFO 3410	Web Systems and Technologies *	4
INFO 3420	Programming Languages	4
INFO 3435	E-Commerce *	4
INFO 3490	Project *	4

SEMESTER 3 (EVENING UNIVERSITY PROGRAMME)

Course Code	Course Title	Credits
INFO 2405	Discrete Mathematics	4
INFO 2415	Enterprise Database Systems4	
INFO 2420	Programming Fundamentals II	4
INFO 2425	Computer Architecture	4
INFO 2430	Business Information Systems	4
INFO 3410	Web Systems and Technologies	4
INFO 3425	Professional Ethics and Law	4
INFO 3440	Software Engineering	4

COURSES NOT OFFERED IN ACADEMIC YEAR 2013/2014

Course Code	Course Title	Credits
COMP 2400	Information Systems	4
COMP2600	Theory of Computing I	4
COMP 3300	Programming Languages I	4
COMP3400	Artificial Intelligence	4
COMP 3500	Internet Technologies I	4
COMP 3600	Theory of Computing II	4
COMP3750	Numerical Computing	4
COMP 3800	Cryptography and Security	4
COMP 3990	Project (Game Programming)	4
INFO 3430	Scientific Computing	4
INFO 3500	User Interface Design and Development	4
INFO 3510	Networking for Professionals	4
INFO 3520	Database Administration for Professionals	4
INFO 3530	Geographic Information Systems for Business	4

Major in Computer Science

(32 ADVANCED CREDITS)

COURSE LISTING

PREREQUISITE COURSES

LEVEL I

SEMESTER 1

Course Code	Course Title	Credits
COMP 1400	Programming I	3
COMP 1401	Introduction to Computer Science Concepts I	3
COMP 1404	Programming II	3
COMP 1405	Programming III	3
MATH 1142	Calculus I	3
MATH 1152	Sets and Number Systems	3

SEMESTER 2

Course Code	Course Title	Credits
COMP 1400	Programming I	3
COMP 1404	Programming II	3
COMP 1405	Programming III	3
MATH 1141	Introductory Linear Algebra and Analytical Geometry	3
MATH 1151	Calculus II	3

CORE COURSES (24 credits):

LEVELS II/III

SEMESTER 1

Course Code	Course Title	Credits
COMP 2000	Data Structures	4
COMP 2200	Computer Architecture	4
COMP 3100	Operating Systems	4

SEMESTER 2

Course Code	Course Title	Credits
COMP 2100	Discrete Mathematics for Computer Science	4
COMP 2500	Object-Oriented Programming	4
COMP 3000	Design and Analysis of Algorithms	4

ELECTIVES (any 8 credits must be selected from the following Computer Science courses):

LEVELS II/III
SEMESTER 1

Course Code	Course Title	Credits
COMP 2700	Database Management Systems I	4
COMP 3150	Computer Networks	4
COMP 3550	Internet Technologies II	4
COMP 3850	Intelligent Systems	4
COMP 3900	Special Topics in Computer Science (Game Programming)	4

LEVELS II/III
SEMESTER 2

Course Code	Course Title	Credits
COMP 2300	Programming for Business Applications	4
COMP 3220	Human Computer Interaction	4
COMP 3250	Software Engineering	4
COMP 3275	Wireless and Mobile Computing	4
COMP 3700	Database Management Systems II	4
COMP 3950	Modelling and Simulation	4

Minor in Computer Science

(16 CREDITS)

PREREQUISITE COURSES
LEVEL I
SEMESTER 1

Course Code	Course Title	Credits
COMP 1400	Programming I	3
COMP 1401	Introduction to Computer Science Concepts I	3
COMP 1404	Programming II	3
COMP 1405	Programming III	3
MATH 1142	Calculus I	3
MATH 1152	Sets and Number Systems	3

SEMESTER 2

Course Code	Course Title	Credits
COMP 1404	Programming II	3
COMP 1405	Programming III	3
MATH 1141	Introductory Linear Algebra and Analytical Geometry	3
MATH 1151	Calculus II	3

CORE COURSES: - (8 CREDITS)
LEVEL II
SEMESTER 1

Course Code	Course Title	Credits
COMP 2000	Data Structures	4

SEMESTER 2

Course Code	Course Title	Credits
COMP 2500	Object-Oriented Programming	4

LEVELS II/III COURSES (8 CREDITS)
Any 8 credits from the following:

LEVELS II/III
SEMESTER 1

Course Code	Course Title	Credits
COMP 2200	Computer Architecture	4
COMP 2700	Database Management Systems I	4
COMP 3100	Operating Systems	4
COMP 3150	Computer Networks	4

LEVELS II/III
SEMESTER 2

Course Code	Course Title	Credits
COMP 3000	Design and Analysis of Algorithms	4
COMP 3250	Software Engineering	4

Major in Information Technology

(32 ADVANCED CREDITS)

COURSE LISTING

PREREQUISITE COURSES
LEVEL I
SEMESTER 1

Course Code	Course Title	Credits
INFO 1500	Introduction to Information Technology Fundamentals	3
INFO 1502	Introduction to Problem Solving	3

SEMESTER 2

Course Code	Course Title	Credits
INFO 1504	Introduction to Programming Fundamentals I	3
INFO 1505	Introduction to Computer Systems	3

CORE COURSES

(24 CREDITS):

LEVELS II & III
SEMESTER 1

Course Code	Course Title	Credits
INFO 2415	Enterprise Database Systems	4
INFO 2420	Programming Fundamentals II	4
INFO 2500	Networking Technologies Fundamentals	4
INFO 3400	Fundamentals of Operating Systems	4

SEMESTER 2

Course Code	Course Title	Credits
INFO 2410	Fundamental Data Structures	4
INFO 3410	Web Systems and Technologies	4

ELECTIVES (8 credits from IT Advanced Courses as listed)

SEMESTER 1

Course Code	Course Title	Credits
INFO 2425	Computer Architecture	4
INFO 2430	Business Information Systems	4
INFO 3415	Information Assurance and Security	4
INFO 3440	Software Engineering	4

SEMESTER 2

Course Code	Course Title	Credits
INFO 2400	Information Systems Development	4
INFO 3420	Programming Languages	4
INFO 3435	E-Commerce	4
INFO 3490	Project	4

BSc Information Technology

(ALSO OFFERED UNDER THE EVENING UNIVERSITY PROGRAMME – ONLY FOR RETURNING STUDENTS w.e.f. 2013/2014)
(93 CREDITS)

THIS PROGRAMME WAS REVISED AND WILL BE IN EFFECT FROM THE ACADEMIC YEAR 2012/2013.

N.B. STUDENTS SHOULD NOTE THE COURSE EQUIVALENCIES LISTED AT THE BEGINNING OF THE DEPARTMENTAL INFORMATION.

KEY:
* INFO courses also offered to students in the Evening University (EU) Programme.

COURSE LISTING

LEVEL I (24 CREDITS)
SEMESTER 1
CORE COURSES

Course Code	Course Title	Credits
INFO 1500	Introduction to Information Technology Fundamentals	3
INFO 1501	Introduction to WWW Programming	3
INFO 1502	Introduction to Problem Solving	3
INFO 1503	Introduction to Mathematics for Critical Thinking	3

LEVEL I
SEMESTER 2
CORE COURSES

Course Code	Course Title	Credits
INFO 1504	Introduction to Programming Fundamentals I	3
INFO 1505	Introduction to Computer Systems	3
INFO 1506	Introduction to Information and Data Management	3
INFO 1507	Introduction to Business Principles	3

LEVEL II/III (60 CREDITS) comprising of CORE courses (48 credits) and ELECTIVE courses (12 credits).
SEMESTER 1
CORE COURSES

Course Code	Course Title	Credits
INFO 2415	Enterprise Database Systems *	4
INFO 2420	Programming Fundamentals II *	4
INFO 2425	Computer Architecture *	4
INFO 2500	Networking Technologies Fundamentals*	4
INFO 3400	Fundamentals of Operating Systems *	4
INFO 3415	Information Assurance and Security *	4
INFO 3440	Software Engineering	4

ELECTIVE COURSE

Course Code	Course Title	Credits
INFO 2430	Business Information Systems	4

LEVEL II/III
SEMESTER 2
CORE COURSES

Course Code	Course Title	Credits
INFO 2400	Information Systems Development*	4
INFO 2405	Discrete Mathematics*	4
INFO 2410	Fundamental Data Structures*	4
INFO 3410	Web Systems & Technologies*	4
INFO 3490	Project	4

ELECTIVE COURSES

Course Code	Course Title	Credits
INFO 3420	Programming Languages	4
INFO 3435	E-Commerce *	4

SEMESTER 3 (EVENING UNIVERSITY PROGRAMME)
CORE COURSES

Course Code	Course Title	Credits
INFO 2405	Discrete Mathematics	4
INFO 2415	Enterprise Database Systems	4
INFO 2420	Programming Fundamentals II	4
INFO 2425	Computer Architecture	4
INFO 2430	Business Information Systems	4
INFO 3410	Web Systems and Technologies	4
INFO 3425	Professional Ethics and Law	4
INFO 3440	Software Engineering	4

FOUNDATION COURSES (9 CREDITS)
SEMESTERS 1 & 2

Course Code	Course Title	Credits
FOUN 1101	Caribbean Civilization	3
FOUN 1301	Law, Governance, Economy and Society	3

SEMESTER 2

Course Code	Course Title	Credits
FOUN 1102	Academic Writing for Different Disciplines (Option C)	3

BSc Computer Science (Special)

(93 CREDITS)

N.B. STUDENTS SHOULD NOTE THE COURSE EQUIVALENCIES LISTED AT THE BEGINNING OF THE DEPARTMENTAL INFORMATION.

COURSE LISTING

LEVEL I (24 CREDITS)
CORE COURSES
SEMESTER 1

Course Code	Course Title	Credits
COMP 1400	Programming I	3
COMP 1401	Introduction to Computer Science Concepts I	3
COMP 1402	Computer Science Mathematics I	3
COMP 1403	Introduction to Web Programming	3
COMP 1404	Programming II	3
COMP 1405	Programming III	3

SEMESTER 2

Course Code	Course Title	Credits
COMP 1404	Programming II	3
COMP 1405	Programming III	3
COMP 1406	Computer Science Mathematics II	3
COMP 1407	Introduction to Computer Science Concepts II	3

LEVEL II/III (60 CREDITS) comprising of: CORE courses (52 credits) and ELECTIVE courses (8 credits) from *any other Level II/III courses*.

CORE COURSES
SEMESTER 1

Course Code	Course Title	Credits
COMP 2000	Data Structures	4
COMP 2200	Computer Architecture	4
COMP 2700	Database Management Systems I	4
COMP 3100	Operating Systems	4
COMP 3150	Computer Networks	4
COMP 3550	Internet Technologies II	4
COMP 3850	Intelligent Systems	4

SEMESTER 2

Course Code	Course Title	Credits
COMP 2100	Discrete Mathematics for Computer Science	4
COMP 2500	Object-Oriented Programming	4
COMP 3000	Design and Analysis of Algorithms	4
COMP 3250	Software Engineering	4
COMP 3950	Modelling and Simulation	4

NOT OFFERED IN 2013/2014 ACADEMIC YEAR

COMP3990	Project (Game Programming)	4

ELECTIVE COURSES
(8 CREDITS from *any other Level II/III courses)*
(COMP/INFO ELECTIVE COURSES)
SEMESTER 1

Course Code	Course Title	Credits
COMP 2700	Database Management Systems I	4
INFO 2415	Enterprise Database Systems	4
INFO 2420	Programming Fundamentals II	4
INFO 2425	Computer Architecture	4
INFO 2430	Business Information Systems	4
INFO 2500	Networking Technologies Fundamentals	4
INFO3400	Fundamentals of Operating Systems	4
INFO 3415	Information Assurance and Security	4
INFO3440	Software Engineering	4

SEMESTER 2

Course Code	Course Title	Credits
COMP 2300	Programming for Business Applications	4
COMP3275	Wireless and Mobile Computing	4
COMP3700	Database Management Systems II	4
COMP 3220	Human-Computer Interaction	4
COMP 3275	Wireless and Mobile Computing	4
COMP 3700	Database Management Systems II	4
INFO 2400	Information Systems Development	4
INFO 2405	Discrete Mathematics	4
INFO2410	Fundamental Data Structures	4
INFO 3410	Web Systems and Technologies	4
INFO 3420	Programming Languages	4
INFO 3435	E-Commerce	4
INFO 3490	Project	4

NOT OFFERED IN 2013/2014 ACADEMIC YEAR

COMP 3220	Human Computer Interaction	4

FOUNDATION COURSES (9 CREDITS)
SEMESTERS 1 & 2

Course Code	Course Title	Credits
FOUN 1101	Caribbean Civilization	3
FOUN 1301	Law, Governance, Economy and Society	3

SEMESTER 2

Course Code	Course Title	Credits
FOUN 1102	Academic Writing for Different Disciplines (Option C)	3

BSc Computer Science and Management

(99 CREDITS)

Please note:

(1) Acceptance for the BSc Computer Science and Management does not guarantee acceptance for courses in the Faculty of Social Sciences other than those specified below.

(2) Students are advised that, in choosing courses from the Faculty of Social Sciences, the regulations from that Faculty will apply. In particular, credit will not be given for two courses which the Faculty of Social Sciences designates as having substantial overlap. Eg. ECON 2001 and MGMT 2032.

(3) Students pursuing the BSc Computer Science & Management (Special Option) must seek the approval of the Programme Coordinator/Head of Department to read courses outside FST in Computing, Information Technology and Information Systems.

COURSE LISTING

CORE COURSES:
LEVEL 1 (30 CREDITS)
SEMESTER 1

Course Code	Course Title	Credits
ACCT 1002	Introduction to Financial Accounting	3
COMP 1400	Programming I	3
COMP 1401	Introduction to Computer Science Concepts I	3
COMP1402	Computer Science Mathematics I	3
COMP 1404	Programming II	3
COMP 1405	Programming III	3
ECON 1001	Introduction to Economics I	3

SEMESTER 2

Course Code	Course Title	Credits
ACCT 1003	Introduction to Cost & Managerial Accounting	3
COMP 1404	Programming II	3
COMP 1405	Programming III	3
COMP 1406	Computer Science Mathematics II	3
ECON 1002	Introduction to Economics II	3

LEVELS II/III (60 CREDITS)
COMPUTER SCIENCE CORE COURSES (32 CREDITS)
SEMESTER 1

Course Code	Course Title	Credits
COMP 2000	Data Structures	4
COMP 2200	Computer Architecture	4
COMP 2700	Database Management Systems I	4
COMP 3100	Operating Systems	4

SEMESTER 2

Course Code	Course Title	Credits
COMP 2100	Discrete Mathematics for Computer Science	4
COMP 2300	Programming for Business Applications	4
COMP 2500	Object -Oriented Programming	4
COMP 3000	Design and Analysis of Algorithms	4

LEVELS II/III
MANAGEMENT COURSES CORE COURSES
(15 CREDITS)
SEMESTER 1

Course Code	Course Title	Credits
MGMT 2021	Business Law	3

SEMESTER 2

Course Code	Course Title	Credits
MGMT 2003	Principles of Marketing	3
MGMT 2008	Organisational Behaviour	3
MGMT 2032	Managerial Economics	3

AND any 3 credits of electives from the following**:**

SEMESTER 1

Course Code	Course Title	Credits
ACCT 2017	Management Accounting	3
MGMT 2012	Quantitative Methods	3
MKTG 3000	Marketing Management	3
MGMT 2023	Financial Management	3

ELECTIVE COURSES (13 CREDITS)
A minimum of thirteen (13) credits chosen from Levels II/III Computer Science, Mathematics, Economics or Management courses.

FOUNDATION COURSES (9 CREDITS)
SEMESTERS 1 & 2

Course Code	Course Title	Credits
FOUN 1101	Caribbean Civilization	3
FOUN 1301	Law, Governance, Economy and Society	3

SEMESTER 2

Course Code	Course Title	Credits
FOUN 1102	Academic Writing for Different Disciplines (Option C)	3

DEPARTMENT OF LIFE SCIENCES

COURSE LISTING

List of Courses Offered in the Department of Life Sciences for the 2013/2014 academic year.

NOTE: Students who entered in 2012/2013 must meet a minimum 93-credit requirement to graduate; those entering before must meet the previous 101-credit requirement unless approval is granted from the Dean's Office.

KEY

* Offered in alternate years
** Taught by Open Campus (School of Continuing Studies); not counted towards a student's credit requirements for the award of the BSc Degree
*** Students must consult with course coordinator prior to registering for BIOL 3068 or BIOL 3069

SEMESTER 1

Course Code	Course Title	Credits
BIOL 0061	Preliminary Biology I**	0
BIOL 1065	Diversity of Plants and Animals	4
BIOL 1262	Living Organisms I	3
BIOL 1263	Living Organisms II	3
BIOL 2061	Cell and Developmental Biology	3
BIOL 2063	Marine Ecology	4
BIOL 2163	Biostatistics	3
BIOL 2164	Principles of Molecular Biology	3
BIOL 2165	Genetics II	3
BIOL 2262	Evolutionary Biology	3
BIOL 2360	Biochemistry IIA	3
BIOL 2361	Biomolecules and Energy *(Remedial – available only for repeaters)*	4
BIOL 2363	Metabolism *(Remedial – available only for repeaters)*	4
BIOL 2461	Humans and the Environment	4
BIOL 2462	Caribbean Island Ecology	4
BIOL 3061	Molecular Biology	4
BIOL 3069	Research Project***	4
BIOL 3361	Applied Biochemistry	4
BIOL 3463	Pollution and Environmental Management	4
BIOL 3763	Crop Improvement	4
BIOL 3766	Plant Ecophysiology	4
BIOL 3767	Biology of Plant Pathogens	4
BIOL 3867	Animal Behaviour	3
BIOL 3863	Tropical Aquaculture	4
BIOC 2061	Bioenergetics	3
BIOC 2069	Practical Skills in Biochemistry I	1.5
BIOC 2161	Primary Metabolism	3
ESST 1000	Physics for Environmental Sciences	3
ESST 1001	Biology for Environmental Sciences	3
ESST 1002	Chemistry for Environmental Sciences	3

SEMESTER 2

Course Code	Course Title	Credits
BIOL 0062	Preliminary Biology II**	0
BIOL 1362	Biochemistry I	3
BIOL 1364	Genetics I	3
BIOL 1462	General Ecology and Biometry *(Only for ENRM majors and repeaters)*	6
BIOL 2062	Freshwater Biology	4
BIOL 2164	Principles of Molecular Biology	3
BIOL 2265	Fundamentals of Microbiology	3
BIOL 2464	Fundamentals of Ecology	3
BIOL 2764	Physiology of Plants	3
BIOL 2866	Entomology	4
BIOL 2867	Physiology of Animals	3
BIOL 3062	Conservation Biology	4
BIOL 3069	Research Project***	4
BIOL 3262	Microbial Biotechnology	4
BIOL 3264	Functional Design in Biology	4
BIOL 3362	Selected Topics in Biochemistry	4
BIOL 3364	Clinical Biochemistry	4
BIOL 3461	Coastal Ecosystem Management	4
BIOL 3464	Tropical Forest Ecology and Management	4
BIOL 3662	Evolution and Biosystematics	4
BIOL 3762	Plant Biotechnology	4
BIOL 3864	Fisheries Biology and Management	4
BIOC 2162	Secretory and Circulatory Systems	3
BIOC 2169	Practical Skills in Biochemistry II	1.5
BIOC 2262	Gene Expression	3
ESST 1004	Science Communication	3
ESST 1005	Information Technology Fundamentals	3
ESST 1006	Human Impact on the Environment	3

SEMESTER 3 (SUMMER)

Course Code	Course Title	Credits
BIOL 3068	Field Course in Neotropical Ecology***	4

Please consult department on courses expected to commence in 2014/2015.

MAJORS & MINORS

The following programmes are offered by the Department of Life Sciences

MAJORS
Biochemistry
Biology

MINORS
Biochemistry
Biology

SPECIAL OPTIONS
BSc in Environmental Science and Sustainable Techonology

BSc Biology with Specializations in:
- Biotechnology
- Ecology
- Environmental Biology
- Plant Biology
- Zoology

Prior to 2011/12, students majoring in **Biology and Biochemistry** should credit BIOL 2361 (Biomolecules and Energy Metabolism) to the major in Biochemistry and BIOL 3061 (Molecular Biology) to the major in Biology. Such students should therefore choose an **ADDITIONAL ELECTIVE** from **EACH** major to replace BIOL 2361 or BIOL 3061

With effect from 2011/12, students majoring in **Biology and Biochemistry** should credit BIOL 3061 - Molecular Biology to the major in Biology. Such students should NOT read BIOL 2365 - Comparative Biochemistry, but should **choose an elective from the given Biology electives to replace BIOL 2365. Students should also chose an elective from the given Biochemistry electives to replace BIOL 3061**

Students wishing to read BIOL 2063 – Marine Ecology or BIOL2462 - Caribbean Island Ecology must have at least a grade B in BIOL1462

BIOL 1061 -	Cell Biology and Genetics will not be credited with AGRI 1011 - Introduction to General Genetics and AGRI 1013 - Introduction to Biochemistry or BIOL 1362 – Biochemistry I or BIOL1364 - Genetics I
BIOL 1261 -	Diversity of Organisms will not be credited with AGRI 1012 - Microbiology or BIOL 1065 - Diversity of Plants and Animals;
BIOL1362 -	Biochemistry I will not be credited with AGRI 1013 - Introduction to Biochemistry;
BIOL1364 -	Introductory Genetics will not be credited with AGRI 1011 - Introduction to General Genetics;

BIOL 2263 -	General Microbiology will not be credited with BIOL 2261 - Biology of Microorganisms
BIOL 3264 -	Functional Design in Biology will not be credited with BIOL 2861 - Function Design in Animals.
BIOL 2365 -	Comparative Biochemistry will not be credited with BIOL 2361 - Biomolecules and Energy Metabolism

Appendix 4 provides additional antirequisites.

NOTE: Students will be debarred from writing the final examination if they have not attended, completed and handed in laboratory reports for at least 75% of laboratory or field exercises.

Major in Biochemistry
COURSE LISTING (PRIOR TO 2012/13)

PREREQUISITE COURSES
LEVEL I
SEMESTER 1

Course Code	Course Title	Credits
BIOL 1261	Diversity of Organisms	6
CHEM 1060	Introductory Chemistry I	6

LEVEL I
SEMESTER 2

Course Code	Course Title	Credits
BIOL 1362	Biochemistry I	3
BIOL 1364	Genetic I	3

CORE COURSES (28 CREDITS)
LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
BIOL 2361	Biomolecules & Energy Metabolism *(Remedial – available only for repeaters)*	4
BIOL 2363	Metabolism *(Remedial – available only for repeaters)*	4
BIOL 3061	Molecular Biology	4
BIOL 3361	Applied Biochemistry	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
BIOL 2362	Further Metabolism & Gene Expression+	4
BIOL 2364	Advanced General Biochemistry+	4
BIOL 3362	Selected Topics in Biochemistry	4

MAJOR ELECTIVES (4 CREDITS)
Any 4 credits from the following:-
LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
BIOL 3069	Research Project	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
BIOL 3069	Research Project	4
BIOL 3262	Microbial Biotechnology	4
BIOL 3364	Clinical Biochemistry	4
CHEM 2460	Principles of Chemical Analysis+	4

+ **Course discontinued with effect from 2013/14.**

Major in Biochemistry
COURSE LISTING (WITH EFFECT FROM 2012/13)
PREREQUISITE COURSES

LEVEL I (STUDENTS MUST COMPLETE AT LEAST 24 LEVEL I CREDITS)

SEMESTER 1

Course Code	Course Title	Credits
BIOL 1262	Living Organisms I	3
BIOL 1263	Living Organisms II	3
CHEM 1066	Introduction to Chemistry I	3

PLUS three (3) additional Level I credits from anywhere.

LEVEL I
SEMESTER 2

Course Code	Course Title	Credits
BIOL 1362	Biochemistry I	3
BIOL 1364	Genetics I	3
CHEM 1067	Introduction to Chemistry II	3

PLUS three (3) additional Level I credits from anywhere.

SEMESTERS I, II

Course Code	Course Title	Credits
MATH 1115	Fundamental Mathematics for the General Sciences I	3
MATH 1125	Fundamental Mathematics for Gereral Science	3

MATH 1115 or MATH 1125 should be taken by students who do not have a pass in Pure Mathematics at CAPE Units I & II or GCE A'Level or equivalent

CORE COURSES (28 CREDITS)
LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
BIOC 2061	Bioenergetics	3
BIOC 2161	Primary Metabolism	3
BIOL 2069	Practical Skills in Biochemistry I	1.5
BIOC 3062	Cellular and Molecular Defence Systems	3

SEMESTER II

Course Code	Course Title	Credits
BIOC 2262	Gene Expression	3
BIOC 2162	Secretory and Circulatory Systems	3
BIOC 2169	Practical Skills in Biochemistry II	1.5
BIOC 3364	Biochemical Basis of Disease	3

PLUS two (2) electives from the following courses which will be available with effect from 2014/2015:

Course Code	Course Title	Credits
BIOC 3262	Medical Biochemistry	3
BIOL 3366	Plant Biotechnology and Genetic Engineering	3
BIOL 3162	Principles of Microbial Biotechnology	3
CHEM 2470	Introduction to Analytical Chemistry	3

NOTE: Level III courses will not be available until 2014/2015

Major in Biology

COURSE LISTING (PRIOR TO 2012/13)

PREREQUISITE COURSES
LEVEL I
SEMESTER 1

Course Code	Course Title	Credits
BIOL 1261	Diversity of Organisms	6
CHEM 1062**	Basic Chemistry for Life Sciences	3

**** For students without a pass in CAPE/GCE A' Level Chemistry or equivalent.**

LEVEL I
SEMESTER 2

Course Code	Course Title	Credits
BIOL 1362	Biochemistry I	3
BIOL 1364	Introductory Genetics	3
BIOL 1462	General Ecology and Biometry	6

CORE COURSES (32 CREDITS)
LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
BIOL 2162	Advanced Genetics+	4
BIOL 2263	General Microbiology+	4
BIOL 2365	Comparative Biochemistry+	4
BIOL 3061	Molecular Biology	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
BIOL 2761	Plant Physiology+	4
BIOL 2862	Animal Physiology+	4
BIOL 3264	Functional Design in Biology	4
BIOL 3662	Evolution & Biosystematics	4

ELECTIVES FOR BIOLOGY DOUBLE MAJOR
LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
BIOL 2063	Marine Ecology	4
BIOL 2461	Humans & the Environment	4
BIOL 2462	Caribbean Island Ecology	4
BIOL 3069	Research Project	4
BIOL 3763	Crop Improvement	4
BIOL 3766	Plant Ecophysiology	4
BIOL 3767	Biology of Plant Pathogens	4
BIOL 3867	Animal Behaviour	3
BIOL 3863	Tropical Aquaculture	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
BIOL 2062	Freshwater Biology	4
BIOL 3062	Conservation Biology	4
BIOL 3069	Research Project	4
BIOL 3262	Microbial Biotechnology	4
BIOL 3461	Coastal Ecosystem Management	4
BIOL 3464	Tropical Forest Ecology and Management	4
BIOL 3762	Plant Biotechnology	4
BIOL 3864	Fisheries Biology & Management	4

SEMESTER 3 (SUMMER)

Course Code	Course Title	Credits
BIOL 3068	Field Course in Neotropical Ecology	4

+Course discontinued with effect from 2013/2014.

Major in Biology

COURSE LISTING (WITH EFFECT FROM 2012/13)

PREREQUISITE COURSES
LEVEL I
(Students must complete at least 24 level I credits)
SEMESTER 1

Course Code	Course Title	Credits
BIOL 1262	Living Organisms I	3
BIOL 1263	Living Organisms II	3
CHEM 1062**	Basic Chemistry for Life Sciences	3

**** For students without a pass in CAPE Units I & II/GCE A' Level Chemistry or equivalent.**

LEVEL I
SEMESTER 2

Course Code	Course Title	Credits
BIOL 1362	Biochemistry I	3
BIOL 1364	Genetics I	3

SEMESTERS I, II

Course Code	Course Title	Credits
MATH 1115	Fundamental Mathematics for the General Sciences I	3
MATH 1125	Fundamental Mathematics for Gen eral Science	3

MATH 1115 or MATH 1125 should be taken by students who do not have a pass in Pure Mathematics at CAPE Units I & II or GCE A'Level or equivalent

CORE COURSES
(Students doing the major must complete all 30 credits of core courses below divided between their 2nd and 3rd year)
LEVEL II
SEMESTER I

Course Code	Course Title	Credits
BIOL 2061	Cell and Developmental Biology	3
BIOL 2163	Biostatistics	3
BIOL 2165	Genetics II	3
BIOL 2262	Evolutionary Biology	3
BIOL 2360	Biochemistry IIA	3

SEMESTER II

Course Code	Course Title	Credits
BIOL 2164	Principles of Molecular Biology	3
BIOL 2265	Fundamentals of Microbiology	3
BIOL 2464	Fundamentals of Ecology	3
BIOL 2764	Physiology of Plants	3
BIOL 2867	Physiology of Animals	3

Additional electives available to Biology Majors with effect from 2014/2015. Please consult department for further information.

SEMESTER I

Course Code	Course Title	Credits
BIOL 3770	Plant Pathogens	3

SEMESTER II

Course Code	Course Title	Credits
BIOL 3164	Function and Design in Biology	3

BSc Biology with Specialisations

COURSE LISTING

PREREQUISITE COURSES

LEVEL I
(Students must complete at least 24 level I credits)
SEMESTER 1

Course Code	Course Title	Credits
BIOL 1262	Living Organisms I	3
BIOL 1263	Living Organisms II	3
CHEM 1062**	Basic Chemistry for Life Sciences	3

**** For students without a pass in CAPE Units I & II/GCE A' Level Chemistry or equivalent)**

LEVEL I
SEMESTER 2

Course Code	Course Title	Credits
BIOL 1362	Biochemistry I	3
BIOL 1364	Genetics I	3

SEMESTERS I, II

Course Code	Course Title	Credits
MATH 1115	Fundamental Mathematics for the General Sciences I	3
MATH 1125	Fundamental Mathematics for General Science	3

MATH 1115 or MATH 1125 should be taken by students who do not have a pass in Pure Mathematics at CAPE Units I & II or GCE A'Level or equivalent

LEVEL II
SEMESTER I

Course Code	Course Title	Credits
BIOL 2061	Cell and Developmental Biology	3
BIOL 2163	Biostatistics	3
BIOL 2165	Genetics II	3
BIOL 2262	Evolutionary Biology	3
BIOL 2360	Biochemistry IIA	3

SEMESTER II

Course Code	Course Title	Credits
BIOL 2164	Principles of Molecular Biology	3
BIOL 2265	Fundamentals of Microbiology	3
BIOL 2464	Fundamentals of Ecology	3
BIOL 2764	Physiology of Plants	3
BIOL 2867	Physiology of Animals	3

SPECIALISATIONS

Students reading for the BSc Degree in Biology are required to do **two SPECIALISATIONS. Each specialisation comprises of 15 credits as listed below**. Other students may choose individual courses as electives, however first preference will be given to persons reading the B.Sc. Degree in Biology.

Specialisations available in:
SPECIALISATION - PLANT BIOLOGY
SPECIALISATION - ZOOLOGY
SPECIALISATION - ECOLOGY & ENVIRONMENTAL BIOLOGY
SPECIALISATION - BIOTECHNOLOGY

Please note list of specialisation courses will be published in the syllabus for 2014/2015. Please consult the department for further information.

BSc Environmental Science and Sustainable Technology

LEVEL I
CORE COURSES
(24 credits)
SEMESTER 1

Course Code	Course Title	Credits
ESST 1000	Physics for Environmental Sciences	3
ESST 1001	Biology for Environmental Sciences	3
ESST 1002	Chemistry for Environmental Sciences	3
MATH 1115	Fundamental Mathematics for the General Sciences I	3

SEMESTER 2

Course Code	Course Title	Credits
ESST 1004	Science Communication	3
ESST 1005	Information Technology Fundamentals	3
ESST 1006	Human Impact on the Environment	3
MATH 1125	Fundamental Mathematics for the General Sciences II	3

PLEASE NOTE LEVEL II AND LEVEL III COURSES WILL BE PUBLISHED IN THE SYLLABUS FOR 2014/2015.

During 2014/2015 a MAJOR IN ENVIRONMENTAL SCIENCE may also be introduced. Students who propose to do this major will require 2 courses from ESST 1000, ESST 1001, ESST 1002 (depending on the other major they are doing) and ESST 1005 and ESST 1006. They should also do another 12 LEVEL I credits from another major. Class size is limited and students doing the full B.Sc. Environmental Science and Sustainable Technology students have priority.

Major in Environmental & Natural Resource Management

This interdisciplinary programme is offered in conjunction with the Departments of Life Sciences, Chemistry, Food Production and Agricultural Economics & Extension. This major will be phased out from 2014/2015.

(i) See note below for students reading joint majors in Biology and Environmental and Natural Resource Management (ENRM).
(ii) Students doing the major in ENRM are not permitted to do the minor in Environmental Biology.

COURSE LISTING

PREREQUISITE COURSES

LEVEL I
SEMESTER 1

Course Code	Course Title	Credits
AGBU 1005	Introduction to Microeconomics	3
AGRI 1012	Microbiology	3
AGSL 1000	Soils and the Environment	4
BIOL 1065	Diversity of Plants and Animals	4

LEVEL I
SEMESTER 2

Course Code	Course Title	Credits
AGBU 1002	Introduction to Agro-Environmental Management	4
BIOL 1462	General Ecology & Biometry	6

CORE COURSES (24 CREDITS)

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
AGSL 3004	Integrated Watershed Management	4
BIOL 2461	Humans & the Environment	4
BIOL 3463	Pollution and Environmental Management	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
AGSL 3002	Soil Survey & Land Evaluation	4
BIOL 3062	Conservation Biology	4
BIOL 3464	Tropical Forest Ecology & Management	4

MAJOR ELECTIVES (8 CREDITS)

Any 8 credits from the following:-

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
AGBU 3010	Environmental Economics	4
AGEX 2001	Operations and Management of Extension Programmes	4
AGSL 3010	Geophysical and Environmental Soil Sensing	4
BIOL 2063	Marine Ecology	4
BIOL 2462	Caribbean Island Ecology	4
BIOL 3069	Research Project	4
BIOL 3766	Plant Ecophysiology	4
CHEM 3560	Environmental Chemistry	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
AGRI 3001	Climate Change Impact and Management	4
AGBU 3003	Introduction to Ecotourism	4
BIOL 2062	Freshwater Biology	4
BIOL 2063	Marine Ecology	4
BIOL 3069	Research Project	4
BIOL 3461	Coastal Ecosystem Management	4
BIOL 3864	Fisheries Biology & Management	4

SEMESTER 3 (SUMMER)

Course Code	Course Title	Credits
BIOL 3068	Field Course in Neotropical Ecology	4

Students wishing to do **JOINT MAJORS** in **Environmental & Natural Resource Management and Biology** should register for the following Level I courses:

SEMESTER 1

Course Code	Course Title	Credits
AGBU1005	Introduction to Microeconomics	3
AGSL1000	Soils and the Environment	4
BIOL 1262	Living Organisms I	3
BIOL 1263	Living Organisms II	3
CHEM 1062**	Basic Chemistry for Life Sciences	3

** (For students without a pass in CAPE/GCE A' Level Chemistry or equivalent)

SEMESTER 2

Course Code	Course Title	Credits
AGBU1002	Introduction to Agro-Environmental Management	4
BIOL 1362	Biochemistry I	3
BIOL 1364	Genetics I	3
BIOL 1462	General Ecology and Biometry	6
MATH1125	Fundamental Mathematics for the General Sciences II **	3

** **For students without a pass in CAPE/GCE A' Level Mathematics or equivalent.**

MINORS for students who started prior to 2012/13

NOTE: Research projects BIOL 3069 done under a relevant area, will be considered towards the following minors in that discipline. Please consult the Head of Department before registering for this course.

(i) Core courses must be credited towards the chosen major and cannot be credited towards the minor.

(ii) Students reading the major in Biology with the minor in Biochemistry should read BIOL 2361 and choose a Biology elective to replace BIOL 2365*

Minor in Biochemistry (for students who started prior to 2012/13)

(16 CREDITS)

COURSE LISTING

CORE COURSES (8 CREDITS)

LEVEL II/III

SEMESTER 1

Course Code	Course Title	Credits
BIOL 2361	Biomolecules & Energy Metabolism (Remedial – available only for repeaters)	4
BIOL 2363	Metabolism (Remedial – available only for repeaters)	4

MINOR ELECTIVES

Any 8 credits from the following courses:

LEVEL II/III

SEMESTER 1

Course Code	Course Title	Credits
BIOL 3061	Molecular Biology	4
BIOL 3069	Research Project	4
BIOL 3361	Applied Biochemistry	4

LEVEL II/III

SEMESTER 2

Course Code	Course Title	Credits
BIOL 2362	Further Metabolism and Gene Expression+	4
BIOL 2364	Advanced General Biochemistry+	4
BIOL 3069	Research Project	4
BIOL 3362	Selected Topics in Biochemistry	4
BIOL 3364	Clinical Biochemistry	4

+Course discontinued with effect from 2013/14

Minor in Biochemistry (with effect from 2013/14)

(15 CREDITS)

COURSE LISTING

CORE COURSES

Course Code	Course Title	Credits
BIOC 2069	Practical Skills in Biochemistry I	1.5
BIOC 2169	Practical Skills in Biochemistry II	1.5
BIOC 2061	Bioenergetics	3
BIOC 2161	Primary Metabolism	3

PLUS Two (2) additional courses taken from the following:

Course Code	Course Title	Credits
BIOC 2262	Gene Expression	3
BIOC 2162	Secretory and Circulatory Systems	3
BIOC 3364	Biochemical Basis of Disease	3
BIOC 3262	Medical Biochemistry	3

Minor in Biology (for students who started prior to 2012/13)

(16 CREDITS)

COURSE LISTING

LEVEL I (PREREQUISITES)

SEMESTER 2

Course Code	Course Title	Credits
BIOL 1362	Biochemistry I	3
BIOL 1364	Genetics I	3

AND 16 credits of Level II/III courses as follows:

CORE COURSES (8 CREDITS)

SEMESTER 2

Course Code	Course Title	Credits
BIOL 2862	Animal Physiology+	4
BIOL 2761	Plant Physiology+	4

ELECTIVES: Any other 8 credits of electives from the following courses:

SEMESTER 1

Course Code	Course Title	Credits
BIOL 2263	General Microbiology+	4
BIOL 2162	Advanced Genetics+	4
BIOL 2365	Comparative Biochemistry+	4
BIOL 2462	Caribbean Island Ecology	4
BIOL 3061	Molecular Biology	4
BIOL 3069	Research Project	4

LEVEL III
SEMESTER 2

Course Code	Course Title	Credits
BIOL3264	Functional Design in Biology	4
BIOL 3662	Evolution and Biosystematics	4
BIOL 3069	Research Project	4

SEMESTER 3 (SUMMER)

Course Code	Course Title	Credits
BIOL 3068	Field Course in Neotropical Ecology	4

+Course discontinued with effect from 2013/14

Minor in Biology (with effect from 2013/14)

(15 CREDITS)

COURSE LISTING

LEVEL I (PREREQUISITES)
SEMESTER 1

Course Code	Course Title	Credits
BIOL 1262	Living Organisms I	3
BIOL 1263	Living Organisms II	3

SEMESTER 2

Course Code	Course Title	Credits
BIOL 1362	Biochemistry I	3
BIOL 1364	Genetics I	3

AND 15 credits of Level II/III courses as follows:

CORE COURSES (6 CREDITS)

Course Code	Course Title	Credits
BIOL2262	Evolutionary Biology	3
BIOL3164	Function and Design in Biology	3

PLUS Three (3) additional courses (8 credits) taken from the following:

Course Code	Course Title	Credits
BIOL 2165	Genetics II	3
BIOL 2360	Biochemistry IIA*	3
BIOL 2464	Fundamentals of Ecology	3
BIOL 2764	Physiology of Plants	3
BIOL 2867	Physiology of Animals	3
BIOL 3770	Plant Pathogens	3

* Students pursuing a Major in Biochemistry should **NOT** select BIOL 2360 Biochemistry IIA as an elective for the minor in Biology

Minor in Biotechnology (for students who started prior to 2012/13)

(15/16 CREDITS)

Any 15/16 credits from the following courses

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
BIOL 3061	Molecular Biology	4
BIOL 3069	Research Project	4
BIOL 3763	Crop Improvement	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
BIOL 3262	Microbial Biotechnology	4
BIOL 3762	Plant Biotechnology	4
AGRI 3012	Agricultural Biotechnology	3
BIOL 3069	Research Project	4

Minor in Botany (for students who started prior to 2012/13)

(16 CREDITS)

Any 16 credits from the following courses

COURSE LISTING

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
BIOL 2462	Caribbean Island Ecology	4
BIOL 3763	Crop Improvement	4
BIOL 3766	Plant Ecophysiology	4
BIOL 3767	Biology of Plant Pathogens	4
BIOL 3069	Research Project	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
BIOL 2761	Plant Physiology+	4
BIOL 3762	Plant Biotechnology	4
BIOL 3069	Research Project	4

SEMESTER 3 (SUMMER)

Course Code	Course Title	Credits
BIOL 3068	Field Course in Neotropical Ecology	4

Minor in Environmental Biology (for students who started prior to 2012/13)

(16 CREDITS)

Any 16 credits from the following courses:

COURSE LISTING

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
BIOL 2063	Marine Ecology	4
BIOL 2461	Humans and the Environment	4
BIOL 2462	Caribbean Island Ecology	4
BIOL 3069	Research Project	4
BIOL 3766	Plant Ecophysiology	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
BIOL 2062	Freshwater Biology	4
BIOL 3062	Conservation Biology	4
BIOL 3464	Tropical Forest Ecology and Management	4
BIOL 3069	Research Project	4

SEMESTER 3 (SUMMER)

Course Code	Course Title	Credits
BIOL 3068	Field Course in Neotropical Ecology	4

Minor in Environmental & Natural Resource Management

(16 CREDITS)

Any 16 credits from the following courses:

COURSE LISTING

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
AGSL 3004	Integrated Watershed Management	4
BIOL 2461	Humans & the Environment	4
BIOL 2462	Caribbean Island Ecology	4
BIOL 3463	Pollution and Environmental Management	4
AGSL 3010	Geophysical and Environmental Soil Sensing	4
BIOL 3069	Research Project	4
BIOL 3766	Plant Ecophysiology	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
AGSL 3002	Soil Survey & Land Evaluation	4
BIOL 3062	Conservation Biology	4
BIOL 3464	Tropical Forest Ecology & Management	4
BIOL 3069	Research Project	4

SEMESTER 3 (SUMMER)

Course Code	Course Title	Credits
BIOL 3068	Field Course in Neotropical Ecology	4

Minor in Marine Biology (for students who started prior to 2012/13)

(16 CREDITS)

Any 16 credits from the following courses:

COURSE LISTING

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
BIOL 2063	Marine Ecology	4
BIOL 3863	Tropical Aquaculture	4
BIOL 3069	Research Project	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
BIOL 3461	Coastal Ecosystem Management	4
BIOL 3864	Fisheries Biology & Management	4
BIOL 3069	Research Project	4

SEMESTER 3 (SUMMER)

BIOL 3068	Field Course in Neotropical Ecology	4

Minor in Zoology (for students who started prior to 2012/13)

(16 CREDITS)

Any 16 credits from the following courses:

COURSE LISTING

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
BIOL 2462	Caribbean Island Ecology	4
BIOL 3867	Animal Behaviour	3
BIOL 3069	Research Project	4

LEVEL II/III
SEMESTER 2

Course Code	Course Title	Credits
BIOL 2862	Animal Physiology+	4
BIOL 2864	Parasitism+	4
BIOL 2866	Entomology	4
BIOL 3662	Evolution and Biosystematics	4
BIOL 3069	Research Project	4

SEMESTER 3 (SUMMER)

Course Code	Course Title	Credits
BIOL 2068	Field Course in Neotropical Ecology	4

+ Course discontinued with effect from 2013/14

DEPARTMENT OF MATHEMATICS & STATISTICS

Please note:

Students reading courses in Mathematics in the Faculty of Science and Technology are advised to consult with the Head, Department of Mathematics & Statistics, before registering for any course in the Faculty of Social Sciences that involves Mathematics or Statistics.

COURSE LISTING

List of courses offered in the Department of Mathematics & Statistics for the 2013/2014 academic year.

KEY:

Students pursuing MATH 2140 or MATH 2150 will not be credited for MATH 2190.

****** Taught by Open Campus; not counted towards a student's credit requirements for the award of the BSc Degree.

LIST OF COURSES OFFERED IN THE DEPARTMENT OF MATHETMATICS & STATISTICS FOR THE 2013/2014 ACADEMIC YEAR

SEMESTER 1

Course Code	Course Title	Credits
MATH 0100	Pre-Calculus**	0
MATH 1115	Fundamental Mathematics for the General Sciences I	3
MATH1125	Fundamental Mathematics for the General Sciences II	3
MATH1142	Calculus I	3
MATH 1152	Sets and Number Systems	3
MATH 1160	Introductory Applied Mathematics I	6
MATH 1191	Introduction to Mathematical Software I	1
MATH 2100	Abstract Algebra	4
MATH 2120	Analysis & Mathematical Methods I	4
MATH 2140	Introduction to Probability##	4
MATH 2170	Introduction to Combinatorics	4
MATH 2190	Probability and Statistics I	4
MATH 2210	Mathematics of Finance	4
MATH 3250	Fluid Dynamics I	4
MATH 3310	Life Contingencies	4
MATH 3351	Regression and Time Series Analysis	4
MATH 3400	Graph Theory	4
MATH 3430	Advanced Algebra I - Theory	4
MATH 3450	Statistical Theory I	4
MATH 3500	Complex Analysis	4

SEMESTER 2

Course Code	Course Title	Credits
MATH 0110	Calculus & Analytical Geometry**	0
MATH 1115	Fundamental Mathematics for the General Sciences I	3
MATH1125	Fundamental Mathematics for the General Sciences II	3
MATH 1141	Introductory Linear Algebra & Analytical Geometry	3
MATH 1151	Calculus II	3
MATH 1170	Introductory Applied Mathematics II	6
MATH 1191	Introduction to Mathematical Software I	1
MATH 2110	Linear Algebra	4
MATH 2150	Introduction to Statistics##	4
MATH 2160	Analysis & Mathematical Methods II	4
MATH 2180	Introduction to Optimization	4
MATH 2220	Introduction to Actuarial Mathematics	4
MATH 3240	Real Analysis	4
MATH 3280	Introduction to Mathematical Modelling	4
MATH 3290	Combinatorics	4
MATH 3320	Risk Theory	4
MATH 3321	Principles of Asset/Liability Management Actuarial Science	4
MATH 3354	Actuarial Project	4
MATH 3440	Advanced Algebra II-Applications	4
MATH 3460	Statistical Theory II	4
MATH 3470	Sampling Theory	4

COURSES NOT OFFERED IN ACADEMIC YEAR 2013/2014

Course Code	Course Title	Credits
MATH 2200	Probability and Statistics II	4
MATH 3110	Mathematical Statistics - Probability Theory	4
MATH 3120	Mathematical Statistics -Statistical Inference	4
MATH 3260	Fluid Dynamics II	4
MATH 3410	Combinatorics and Computing	4
MATH 3420	Special Topics in Graph Theory	4

Major in Mathematics

(32 CREDITS)

COURSE LISTING

PREREQUISITE COURSES

LEVEL I

SEMESTER 1

Course Code	Course Title	Credits
MATH 1142	Calculus I	3
MATH 1152	Sets and Number Systems	3

SEMESTER 2

Course Code	Course Title	Credits
MATH 1141	Introductory Linear Algebra & Analytical Geometry	3
MATH 1151	Calculus II	3

CORE COURSES (16 credits):

LEVEL II

SEMESTER 1

Course Code	Course Title	Credits
MATH 2100	Abstract Algebra	4
MATH 2120	Analysis & Mathematical Methods I	4

SEMESTER 2

Course Code	Course Title	Credits
MATH 2110	Linear Algebra	4
MATH 2160	Analysis & Mathematical Methods II	4

ELECTIVES (16 credits)

(At least 8 credits must be selected from Level III Mathematics courses)

LEVELS II/III

SEMESTER 1

Course Code	Course Title	Credits
MATH 2140	Introduction to Probability	4
MATH 2170	Introduction to Combinatorics	4
MATH 2190	Probability and Statistics I	4
MATH 2210	Mathematics of Finance	4
MATH 3250	Fluid Dynamics I	4
MATH 3310	Life Contingencies	4
MATH 3351	Regression and Time Series Analysis	4
MATH 3400	Graph Theory	4
MATH 3430	Advanced Algebra I - Theory	4
MATH 3450	Statistical Theory I	4
MATH 3500	Complex Analysis	4

LEVEL II/III

SEMESTER 2

Course Code	Course Title	Credits
MATH 2150	Introduction to Statistics	4
MATH 2180	Introduction to Optimization	4
MATH 2220	Introduction to Actuarial Mathematics	4
MATH 3240	Real Analysis	4

MATH 3280	Introduction to Mathematical Modelling I	4
MATH 3290	Combinatorics	4
MATH 3320	Risk Theory	4
MATH 3321	Principles of Asset/Liability Management Actuarial Science	4
MATH 3440	Advanced Algebra II - Applications	4
MATH 3460	Statistical Theory II	4
MATH 3470	Sampling Theory	4

The following electives for the major in Mathematics will not be offered in the academic year 2013/2014:

Course Code	Course Title	Credits
MATH 2200	Probability and Statistics II	4
MATH 3110	Mathematical Statistics-Probability Theory	4
MATH 3120	Mathematical Statistics - Statistical Inference	4
MATH 3260	Fluid Dynamics II	4
MATH 3410	Combinatorics and Computing	4
MATH 3420	Special Topics in Graph Theory	4

Double Major in Mathematics

(64 CREDITS)

COURSE LISTING

PREREQUISITE COURSES

LEVEL I

SEMESTER 1

Course Code	Course Title	Credits
MATH 1142	Calculus I	3
MATH 1152	Sets and Number Systems	3

SEMESTER 2

Course Code	Course Title	Credits
MATH 1141	Introductory Linear Algebra & Analytical Geometry	3
MATH 1151	Calculus II	3

CORE COURSES (16 CREDITS):

LEVEL II

SEMESTER 1

Course Code	Course Title	Credits
MATH 2100	Abstract Algebra	4
MATH 2120	Analysis & Mathematical Methods I	4

SEMESTER 2

Course Code	Course Title	Credits
MATH 2110	Linear Algebra	4
MATH 2160	Analysis & Mathematical Methods II	4

ELECTIVES (48 CREDITS)

(At least 32 credits must be selected from Level III Mathematics courses)

LEVELS II/III

SEMESTER 1

Course Code	Course Title	Credits
MATH 2140	Introduction to Probability	4
MATH 2170	Introduction to Combinatorics	4
MATH 2190	Probability and Statistics I	4
MATH 2210	Mathematics of Finance	4
MATH 3250	Fluid Dynamics I	4
MATH 3310	Life Contingencies	4
MATH 3351	Regression and Time Series Analysis	4
MATH 3400	Graph Theory	4
MATH 3430	Advanced Algebra I - Theory	4
MATH 3450	Statistical Theory I	4
MATH 3500	Complex Analysis	4

LEVEL II/III

SEMESTER 2

Course Code	Course Title	Credits
MATH 2150	Introduction to Statistics	4
MATH 2180	Introduction to Optimization	4
MATH 2220	Introduction to Actuarial Mathematics	4
MATH 3240	Real Analysis	4
MATH 3280	Introduction to Mathematical Modelling I	4
MATH 3290	Combinatorics	4
MATH 3320	Risk Theory	4
MATH 3321	Principles of Asset/Liability Management Actuarial Science	4
MATH 3440	Advanced Algebra II - Applications	4
MATH 3460	Statistical Theory II	4
MATH3470	Sampling Theory	4

The following electives for the double major in Mathematics **WILL NOT BE OFFERED** in academic year 2013/2014.

Course Code	Course Title	Credits
MATH 2200	Probability and Statistics II	4
MATH 3110	Mathematical Statistics - Probability Theory	4
MATH 3120	Mathematical Statistics - Statistical Inference	4
MATH 3260	Fluid Dynamics II	4
MATH 3410	Combinatorics and Computing	4
MATH 3420	Special Topics in Graph Theory	4

Minor in Mathematics

(16 CREDITS)

COURSE LISTING

CORE COURSES (8 credits):

LEVEL II

SEMESTER 1

EITHER

Course Code	Course Title	Credits
MATH 2100	Abstract Algebra	4
OR		
MATH 2120	Analysis & Mathematical Methods I	4

SEMESTER 2

EITHER

Course Code	Course Title	Credits
MATH 2110	Linear Algebra	4
OR		
MATH 2160	Analysis & Mathematical Methods II	4

ELECTIVES:

Any 8 credits from the following:

LEVELS II/III

SEMESTER 1

Course Code	Course Title	Credits
MATH 2140	Introduction to Probability	4
MATH 2170	Introduction to Combinatorics	4
MATH 2190	Probability and Statistics I	4
MATH 2210	Mathematics of Finance	4
MATH 3250	Fluid Dynamics I	4
MATH 3310	Life Contingencies	4
MATH 3351	Regression and Time Series Analysis	4
MATH 3400	Graph Theory	4
MATH 3430	Advanced Algebra I - Theory	4
MATH 3450	Statistical Theory I	4
MATH 3500	Complex Analysis	4

LEVEL II/III

SEMESTER 2

Course Code	Course Title	Credits
MATH 2150	Introduction to Statistics	4
MATH 2180	Introduction to Optimization	4
MATH 2220	Introduction to Actuarial Mathematics	4
MATH 3240	Real Analysis	4
MATH 3280	Introduction to Mathematical Modelling I	4
MATH 3290	Combinatorics	4
MATH 3320	Risk Theory	4
MATH 3321	Principles of Asset/Liability Management Actuarial Science	4
MATH 3440	Advanced Algebra II - Applications	4
MATH 3460	Statistical Theory II	4
MATH 3470	Sampling Theory	4

The following electives for the minor in Mathematics **WILL NOT BE OFFERED** in the academic year **2013/2014**

Course Code	Course Title	Credits
MATH 2200	Probability and Statistics II	4
MATH 3110	Mathematical Statistics - Probability Theory	4
MATH 3120	Mathematical Statistics - Statistical Inference	4
MATH 3260	Fluid Dynamics II	4
MATH 3410	Combinatorics and Computing	4
MATH 3420	Special Topics in Graph Theory	4

Minor in Statistics

(16 CREDITS)

COURSE LISTING

LEVELS II/III

SEMESTER 1

Course Code	Course Title	Credits
MATH 3450	Statistical Theory I	4

SEMESTER 2

Course Code	Course Title	Credits
MATH 2150	Introduction to Statistics	4
MATH 3460	Statistical Theory II	4
MATH 3470	Sampling Theory	4

BSc Actuarial Science

(104 CREDITS)

COURSE LISTING

LEVEL I (30 CREDITS)

SEMESTER 1

Course Code	Course Title	Credits
ACCT 1002	Introduction to Financial Accounting	3
ECON 1001	Introduction to Economics I	3
COMP 1400	Programming I	3
MATH 1142	Calculus I	3
MATH 1152	Sets and Number Systems	3

LEVEL I

SEMESTER 2

Course Code	Course Title	Credits
ACCT 1003	Introduction to cost & Managerial Accounting	3
ECON 1002	Introduction to Economics II	3
COMP 1404	Programming II	3
MATH1141	Introductory Linear Algebra & Analytical Geometry	3
MATH 1151	Calculus II	3

LEVELS II/III (65 CREDITS)
SEMESTER 1
CORE COURSES
LEVEL II

Course Code	Course Title	Credits
MATH 2100	Abstract Algebra	4
MATH 2120	Analysis and Mathematical Methods I	4
MATH 2140	Introduction to Probability Theory	4
MATH 2210	Mathematics of Finance I	4
MGMT 2023	Financial Management I	3

SEMESTER 2

Course Code	Course Title	Credits
MATH 2110	Linear Algebra	4
MATH 2160	Analysis and Mathematical Methods II	4
MATH 2150	Introduction to Statistics	4
MATH 2220	Introduction to Actuarial Mathematics	4

LEVELS III
SEMESTER 1

Course Code	Course Title	Credits
MGMT 3048	Financial Management II	3
MATH 3351	Regression and Time Series Analysis	4
MATH 3310	Life Contingencies	4

SEMESTER 2

Course Code	Course Title	Credits
MATH 3320	Risk Theory	4
MATH 3321	Principles of Asset/Liability Management for Actuarial Science	4
MATH 3354	Actuarial Project	4

ELECTIVE COURSES (7 CREDITS)
Students may select any level III courses in or outside the faculty.

FOUNDATION COURSES (9 CREDITS)

Course Code	Course Title	Credits
FOUN 1101	Caribbean Civilization	3
FOUN 1102	Academic Writing for Different Disciplines	3
FOUN 1301	Law, Governance, Economy and Society	3

Minor in Actuarial Science

(16 CREDITS)

COURSE LISTING

CORE COURSES (12 CREDITS)
LEVELS II/III
SEMESTER 1

Course Code	Course Title	Credits
MATH 2210	Mathematics of Finance	4
MATH 3310	Life Contingencies	4

SEMESTER 2

Course Code	Course Title	Credits
MATH 2220	Introduction to Actuarial Mathematics	4

ELECTIVES:
Four (4) credits from:

Course Code	Course Title	Credits
MATH 3320	Risk Theory	4
MATH 3321	Principles of Asset/Liability Management Actuarial Science	4

BSc Statistics and Economics

(99 CREDITS)

COURSE LISTING

LEVEL I (34 CREDITS)
SEMESTER 1

Course Code	Course Title	Credits
MATH 1142	Calculus I	3
MATH 1152	Sets & Numbers Systems	3
EITHER		
SOCI 1002	Introduction to Sociology	3
OR		
PSYC 1003	Introduction to Psychology	3
ECON 1001	Introduction to Economics I	3
ACCT 1002	Financial Accounting	3
PLUS:	One (1) Foundation (FOUN) course	3

LEVEL I
SEMESTER 2

Course Code	Course Title	Credits
MATH 1151	Calculus II	3
COMP 1400	Programming I	3
ECON 1002	Introduction to Economics II	3
MATH 1191	Introduction to Mathematics Software I	1
MATH 1141	Introduction to Linear Algebra Analytical Geometry	3
PLUS:	One (1) Foundation (FOUN) course	3

LEVELS II/III (65 CREDITS)
LEVEL II
SEMESTER 1

Course Code	Course Title	Credits
MATH 2120	Analysis & Mathematical Methods I	4
MATH 2140	Introduction Probability	4
ECON 2000	Intermediate Microeconomics I	3
ECON 2002	Intermediate Macroeconomics I	3
PLUS:	One (1) Foundation (FOUN) course	3

LEVEL II
SEMESTER 2

Course Code	Course Title	Credits
MATH 2110	Linear Algebra	4
MATH 2150	Introduction to Statistics	4
ECON 2001	Intermediate Microeconomics II	3
ECON 2003	Intermediate Macroeconomics II	3
ECON 2005	Social and Economic Accounting	3

LEVEL III
SEMESTER 1

Course Code	Course Title	Credits
MATH 3450	Statistical Theory I	4
ECON 3049	Econometrics I	3
EITHER		
ECON 2020	Caribbean Economy	3
OR		
ECON 3051	Topics in Economic Development	3

PLUS: One (1) elective in Mathematics OR Statistics 4

PLUS: One (1) elective in Mathematics OR Economics 3

LEVEL III
SEMESTER 2

Course Code	Course Title	Credits
MATH 3460	Statistical Theory II	4
ECON 3073	Internship in Statistics	3
ECON 3050	Econometrics II	3
MATH 3470	Sampling Theory	4

FOUNDATION COURSES
SEMESTERS 1 & 2

Course Code	Course Title	Credits
FOUN 1101	Caribbean Civilization	3
FOUN 1301	Law, Governance, Economy and Society	3

SEMESTER 2

Course Code	Course Title	Credits
FOUN 1102	Academic Writing for Different Disciplines (Option C)	3

DEPARTMENT OF PHYSICS

The following list indicates courses to be taught in 2013/2014.

SEMESTER 1

Course Code	Course Title	Credits
BMET 1004	Introductory Anatomy & Physiology I	*3*
PHYS 0070	Preliminary Physics I*	0
PHYS 1211	Introduction to Mechanics and Heat	3
PHYS 1213	Introduction to Oscillations and Waves	1.5
PHYS 1214	Introductory Physics Laboratory I	1.5
PHYS 2150	Mathematics for Physicists	3
PHYS 2151	Classical and Statistical Mechanics	3
PHYS 2155	Major Laboratory Level II *(year long)*	3
PHYS 2156	Meteorology and Climatology	3
PHYS 2160	Advanced Medical Physics & Bioengineering	3
PHYS 2165	Materials Science 1	3
PHYS 3150	Electromagnetism	3
PHYS 3153	Physics Major Research Project	3
PHYS 3155	Major Laboratory Level III *(year long)*	3
PHYS 3156	Principles of Physical Oceanography and Geohydrology *(To be offered in 2014/2015)*	3
PHYS 3159	Environmental Physics Laboratory *(year long)*	3
PHYS 3161	Analog Electronics II	3
PHYS 3163	Electronics Laboratory *(year long)*	3
PHYS 3164	Ceramics Science	3
PHYS 3166	Materials Science Laboratory *(year long)*	3

SEMESTER 2

Course Code	Course Title	Credits
BMET 1005	Introductory Anatomy & Physiology II	3
PHYS 0071	Preliminary Physics II*	0
PHYS 1001	Introduction to Astronomy	3
PHYS 1212	Introduction to Electricity & Magnetism and Modern Physics	3
PHYS 1215	Introductory Physics Laboratory II	1.5
PHYS 1216	Introduction to Optics	1.5
PHYS 2152	Vibrations, Waves and Optics	3
PHYS 2153	Astrophysics	3
PHYS 2159	Introductory Medical Physics and Bioengineering	3
PHYS 2163	Analog Electronics I	3
PHYS 2166	Technological Materials *(To be offered in 2014/2015)*	3
PHYS 3151	Quantum Mechanics	3
PHYS 3152	Advanced Thermodynamics and Solid State Physics	3

PHYS 3153	Physics Major Research Project	3
PHYS 3157	Earth Science *(To be offered in 2014/2015)*	3
PHYS 3158	Fundamentals of Renewable Energy	3
PHYS 3162	Digital Electronics II	3
PHYS 3165	Materials Science II	3
PHYS 3167	Radiation Biophysics and Medicine	3

*** Taught by Open Campus; not counted towards the credit requirements for the award of the BSc Degree.**

1. Students reading PHYS 2165 Materials Science I cannot read CHNG 1003 Science of Materials (Chemical and Process Engineering course).

2. Students repeating a course may carry over the practical coursework mark for a maximum of two (2) years. However the theory coursework must be repeated. Please consult with the Head of Department.

3. Laboratory courses (year long): Students are required to register for each year long laboratory course in **Semester I** of the Academic year. However, since these are year long courses credit will be assigned only in **Semester II.**

Major in Physics

(30 CREDITS)

COURSE LISTING

PREREQUISITES
LEVEL I
SEMESTER 1

Course Code	Course Title	Credits
PHYS 1211	Introduction to Mechanics and Heat	3
PHYS 1213	Introduction to Oscillations and Waves	1.5
PHYS 1214	Introductory Physics Laboratory I	1.5

SEMESTER 2

PHYS 1212	Introduction to Electricity & Magnetism and Modern Physics	3
PHYS 1215	Introductory Physics Laboratory II	1.5
PHYS 1216	Introduction to Optics	1.5

CORE COURSES (30 CREDITS)
LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
PHYS 2150	Mathematics for Physicists	3
PHYS 2151	Classical and Statistical Mechanics	3
PHYS 2155	Major Laboratory Level II (year long)	3
PHYS 3150	Electromagnetism	3
PHYS 3153	Physics Major Research Project *(Offered in both semesters)*	3
PHYS 3155	Major Laboratory Level III *(year long)*	3

SEMESTER 2

Course Code	Course Title	Credits
PHYS 2152	Vibrations, Waves and Optics	3
PHYS 2153	Astrophysics	3
PHYS 3151	Quantum Mechanics	3
PHYS 3152	Advanced Thermodynamics and Solid State Physics	3
PHYS 3153	Physics Major Research Project *(Offered in both semesters)*	3

Physics Minors

ELECTRONICS MINOR

(15 CREDITS)

LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
PHYS 2162	Digital Electronics I	3
PHYS 3161	Analog Electronics II	3
PHYS 3163	Electronics Laboratory *(year long)*	3

SEMESTER 2

Course Code	Course Title	Credits
PHYS 2163	Analog Electronics I	3
PHYS 3162	Digital Electronics II	3

ENVIRONMENTAL PHYSICS MINOR

(**15 CREDITS)**

CORE COURSE (3 CREDITS)

PHYS 3159	Environmental Physics Laboratory (year-long)	3

PLUS ANY OTHER FOUR (4) FROM THE FIVE (5) LISTED BELOW
LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
PHYS 2156	Meteorology and Climatology	3
PHYS 3156	Principles of Physical Oceanography and Geohydrology *(To be offered in 2014/2015)*	3

SEMESTER 2

Course Code	Course Title	Credits
PHYS 2157	Solid Earth Geophysics	3
PHYS 3157	Earth Science *(To be offered in 2014/2015)*	3
PHYS 3158	Fundamentals of Renewable Energy	3

MATERIALS SCIENCE MINOR

ANY 15 CREDITS FROM THE FOLLOWING:
LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
PHYS 2165	Materials Science 1	3
PHYS 3164	Ceramics Science	3
PHYS 3166	Materials Science Laboratory *(year long)*	3

SEMESTER 2

Course Code	Course Title	Credits
PHYS 3165	Materials Science 11	3
PHYS 2166	Technological Materials *(To be offered in 2014/2015)*	3

MEDICAL PHYSICS & BIOENGINEERING MINOR

(15 CREDITS)
LEVEL II/III
SEMESTER 1

Course Code	Course Title	Credits
PHYS 2160	Advanced Medical Physics and Bioengineering	3
PHYS 3160	Medical Physics & Bioengineering Laboratory *(year long)*	3
PHYS 3168	Medical Instrumentation *(Offered in 2014/2015)*	3

SEMESTER 2

Course Code	Course Title	Credits
PHYS 2159	Introductory Medical Physics & Bioengineering	3
PHYS 3167	Radiation Biophysics and Medicine	3

BSc Biomedical Technology

(93 CREDITS)

SEMESTER 1
LEVEL 1 (ALL ARE CORE COURSES)

Course Code	Course Title	Credits
PHYS 1211	Introduction to Mechanics and Heat	3
PHYS 1213	Introduction to Oscillations and Waves	1.5
PHYS 1214	Introductory Physics Laboratory I	1.5
BMET 1004	Introductory Anatomy & Physiology I	3
MATH 1115	Fundamental Mathematics for the General Sciences I	3

SEMESTER 2

PHYS 1212	Introduction to Electricity and Magnetism and Modern Physics	3
PHYS 1216	Introduction to Optics	1.5
PHYS 1215	Introductory Physics Laboratory Course II	1.5
MATH 1125	Fundamental Mathematics for the General Sciences II	3
BMET 1005	Introductory Anatomy & Physiology II	3

PLEASE NOTE LEVEL II AND LEVEL III COURSES WILL BE PUBLISHED IN THE SYLLABUS FOR 2014/2015

LANGUAGE COURSES

The Centre for Language Learning (CLL) offers courses in 10 foreign languages: Arabic, Chinese, French, German, Hindi, Italian, Japanese, Portuguese, Spanish and Yoruba.

Its aim is to empower students to use the target language in order to understand information, to express themselves orally and in writing, to communicate with native and non-native speakers of the language and engage with the culture of the language.

Students can register at the CLL and attend classes in any language, upon payment of a small registration fee. Students can also pursue credit courses in Chinese, French, Japanese and Spanish. Registration is online using BANNER. **Students must complete a paper-based registration at the CLL before their online registration.** The normal per credit fee applies.

CHINESE (MANDARIN)

Course Code	Course Title	Credits
CHIN 1003	Level 1A Chinese (Mandarin) I	2
CHIN 1004	Level 1B Chinese (Mandarin) II	2

FRENCH

Course Code	Course Title	Credits
FREN 1001	Level 1A French I & II	2
FREN 1002	Level 1B French I & II	2

JAPANESE

Course Code	Course Title	Credits
JAPA 1003	Level 1A Japanese I	2
JAPA 1004	Level 1B Japanese II	2

SPANISH

Course Code	Course Title	Credits
SPAN 1101	Level 1A Spanish I & II	2
SPAN 1102	Level 1B Spanish I & II	2

SECTION VIII: COURSE DESCRIPTIONS

ALPHABETICAL LISTING BY COURSE CODES

LEVEL: I
SEMESTERS: 1
COURSE CODE: ACCT 1002
COURSE TITLE: INTRODUCTION TO FINANCIAL ACCOUNTING
NUMBER OF CREDITS: 3
PREREQUISITES: NONE
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: An introductory course designed for students of accounting and those in other areas of study. It aims at producing a practical and a theoretical understanding of the principles and concepts involved in the preparation of financial statements. Students are exposed to conceptual analytical approach with the aim of improving their critical thinking and communicative skills.
Assessment:

Coursework	25%
Final Examination	75%

LEVEL: I
SEMESTERS: 2
COURSE CODE: ACCT 1003
COURSE TITLE: INTRODUCTION TO COST & MANAGERIAL ACCOUNTING
NUMBER OF CREDITS: 3
PREREQUISITES: NONE
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: This is an introductory course for students of accounting as well as other areas of study. It aims to acquaint them with the uses of accounting information and techniques useful to the manager in planning, decision-making and controlling organisational activities.
Assessment:

Coursework	25%
Examination	75%

LEVEL: II
SEMESTER: 1
COURSE CODE: ACCT 2017
COURSE TITLE: MANAGEMENT ACCOUNTING
NUMBER OF CREDITS: 3
PREREQUISITES: ACCT 1002 AND ACCT 1003
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: The course explains how managerial accounting information is used by managers in manufacturing, retail, service and not-for-profit organisations to anticipate the future and monitor the activities of the business.
Assessment:

Coursework	25%
Final Examination	75%

LEVEL: I
SEMESTER: 2
COURSE CODE: AGBU 1002
COURSE TITLE: INTRODUCTION TO AGRO-ENVIRONMENTAL MANAGEMENT
NUMBER OF CREDITS: 4
PREREQUISITES: NONE
COURSE DESCRIPTION: The role and importance of the environment for social development and as a life support system. The nexus between agriculture and the environment. Agro-ecosystems structure and dynamics.

Economics of environmental resources: market failure and environmental degradation, externalities and public goods; optimal resource use/extraction and approaches for management of renewable resources.

Concept of the watershed as a management unit: hydrology, soils, natural forest, biodiversity and land use. The impact of agricultural practices on the environment viewed from an ecosystem perspective: deforestation, soil erosion/degradation, flooding, irrigation, loss of biodiversity and climate change. Case studies of impacts related to various agricultural systems: crop and livestock, subsistence and plantation farming, hillside and erodable soils, pesticide and chemical application, irrigated agriculture.

Integration of the concepts and issues discussed in designing sustainable agro-environmental systems for the tropics; focus on small island states. Case studies.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: AGBU 1005
COURSE TITLE: INTRODUCTION TO MICROECONOMICS
NUMBER OF CREDITS: 3
PREREQUISITES: NONE
COURSE DESCRIPTION: Nature and Scope of Economics: General overview: Functions performed by economic systems; Resources/Factors of Production and Characteristics.
Demand and Supply: Concepts; definitions and introduction to factors affecting demand and supply; elasticities. Market Price and Quantity determination; interpretation and applications.
Theories of Consumer Behaviour: Marginal utility and indifference theories, Theory of Production, Supply and Cost: Production functions forms; profit maximisation behaviour and rationality in production. Market Structures and Forms: Market types and characteristics; profit maximisation behaviour in perfect competition and monopoly.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: AGRI 1012
COURSE TITLE: MICROBIOLOGY
NUMBER OF CREDITS: 3
PREREQUISITES: NONE
COURSE DESCRIPTION: Microbiology as a fundamental study of bacteria, fungi and viruses, their structure and growth, genetic recombination in bacteria and microbial control. Food-borne diseases and Hazard Analysis and Critical Food Point System (HACCP). A study of the ecology of microorganism, and the roles of microorganisms in agriculture, technology and human.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: AGSL 1000
COURSE TITLE: SOILS AND THE ENVIRONMENT
NUMBER OF CREDITS: 4
PREREQUISITES: NONE
COURSE DESCRIPTION: Soil texture, structure, aeration, water relations, evapotranspiration, climatic factors and their measurements; impact of local climate and climate near the ground on agriculture; agriculture and the environment. Chemical nature and properties of clays, soil organic matter, ion exchange and soil reaction; agricultural importance of soil components; soil chemical constraints and availability of N, P, K, Ca, Mg and minor elements; amelioration of chemical behaviour of soils.
Assessment:

Coursework	25%
Final Examination	75%

LEVEL: III
SEMESTER: 2
COURSE CODE: AGSL 3002
COURSE TITLE: SOIL SURVEY AND LAND EVALUATION
NUMBER OF CREDITS: 4
PREREQUISITES: AGSL1000 OR GEOM 1011, GEOM 1015 AND GEOM 1030
COURSE DESCRIPTION: Principles of soil ecology and soil habitation - faunal and floral interactions with soil properties; kinds, classes, and field techniques in soil surveys; Aerial photographic interpretation; Remote sensing, GIS and their applications; soil and land capability classification; Use and interpretation of soil and land capability maps; Land evaluation techniques.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: AGSL 3004
COURSE TITLE: INTEGRATED WATERSHED MANAGEMENT
NUMBER OF CREDITS: 4
PREREQUISITES: AGSL 1000
COURSE DESCRIPTION: The hydrologic cycle; rainfall, runoff/stream flow measurement and analysis; rainfall-runoff models; the watershed and its ecosystem; biogeochemical and nutrient cycles; integrated watershed management principles and planning; soil and water resources conservation practices; watershed degradation and restoration; soil erosion and control; water quality and yield improvement; the role of forestry/agro-forestry; socio-economic, legal and institutional aspects. Case studies and field trips.
Assessment:

Coursework	25%
Final Examination	75%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOC 2061
COURSE TITLE: Bioenergetics
NUMBER OF CREDITS: 3
PREREQUISITES: BIOL 1362, CHEM 1066 AND CHEM 1067
COURSE DESCRIPTION: pH and buffers; Bioenergetics, Membrane structure ; Introduction to membrane transport; TCA cycle; Oxidative phosphorylation; Plant and fungal respiratory chains; Transporters of the mitochondrial inner membrane; Photosynthetic light reactions of plants and bacteria; Calvin cycle; C3, C4 and CAM metabolism; GS-GOGAT and photorespiration; Mitochondria-plastid interactions in higher plants; Chlororespiration; Mitochondrial dysfunction
Assessment:

Coursework	50%
Final Exam	50%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOC 2069
COURSE TITLE: PRACTICAL SKILLS IN BIOCHEMISTRY I
NUMBER OF CREDITS: 1.5
PREREQUISITES: BIOL 1362, CHEM 1066 AND CHEM 1067
COURSE DESCRIPTION: This course is composed primarily of laboratory exercises which assist students to understand concepts taught in the classroom as well as introduce techniques necessary to function efficiently in a biochemistry lab. Topics covered include: Instrumentation and safety in the biochemistry laboratory; pH and buffers; proteins and amino acids; the Hill Reaction; measurement of arginase activity; assay of tissue glycogen.
Assessment:

Coursework	100%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOC 2161
COURSE TITLE: PRIMARY METABOLISM
NUMBER OF CREDITS: 3
PREREQUISITES: BIOL 1362, CHEM 1066 AND CHEM 1067
COURSE DESCRIPTION: Regulation mechanisms of enzymes in biological systems; Enzyme mechanisms; Carbohydrate metabolism; Nitrogen metabolism; Amino Acids; Lipid metabolism Integrated Metabolism; Regulation of Metabolism
Assessment:

Coursework	50%
Final Exam	50%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOC 2162
COURSE TITLE: SECRETORY AND CIRCULATORY SYSTEMS
NUMBER OF CREDITS: 3
PREREQUISITES: BIOL 1362, CHEM 1066 AND CHEM 1067
COURSE DESCRIPTION: Protein stability and folding; Protein trafficking (mitochondria, chloroplast, nucleus and E.R.); Intracellular vesicular traffic; Cytoskeleton; Hormones; Plant hormones; Biochemical effectors of the mammalian respiratory and circulatory systems
Assessment:

Coursework	50%
Final Exam	50%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOC 2169
COURSE TITLE: PRACTICAL SKILLS IN BIOCHEMISTRY II
NUMBER OF CREDITS: 1.5
PREREQUISITES: BIOL 1362, CHEM 1066 AND CHEM 1067
COURSE DESCRIPTION: This course is composed primarily of laboratory exercises which assist students to understand concepts taught in the classroom as well as introduce techniques necessary to function efficiently in a biochemistry lab. As this course builds upon those techniques studied in Practical skills in Biochemistry I students must first have taken that course. Topics covered include are DNA and RNA isolation from animal tissues and a project where the students isolate and characterize invertase from yeast.
Assessment:

Coursework	100%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOC 2262
COURSE TITLE: GENE EXPRESSION
NUMBER OF CREDITS: 3
PREREQUISITES: BIOL 1362, BIOL1364 AND CHEM 1066
COURSE DESCRIPTION: Chemistry of nucleic acids, gene expression events and regulation, DNA surveillance and repair mechanisms; nucleotide biosynthesis, gene expression and developmental biology.
Assessment:

Coursework	50%
Final Exam	50%

LEVEL: 0 (PRELIMINARY)
SEMESTER: 1
COURSE CODE: BIOL 0061
COURSE TITLE: PRELIMINARY BIOLOGY I
NUMBER OF CREDITS: 0
PREREQUISITES: CSEC OR EQUIVALENT PASS IN BIOLOGY
COURSE DESCRIPTION: An introduction to Cell and Plant Biology including the ultra -structure of plant and animal cells; comparison between prokaryotic and eukaryotic cells; structure and function of micro- and macro-molecules; enzymes; respiration and photosynthesis. Introduction of the Plant Kingdom, plant anatomy, morphology and physiology to include water relations, ion uptake, mineral nutrition; regulation of growth and development by hormonal and environmental factors.
Assessment:

Coursework		50%
Theory	20%	
Practical	30%	
Final Examination		50%

LEVEL: 0 (PRELIMINARY)
SEMESTER: 2
COURSE CODE: BIOL 0062
COURSE TITLE: PRELIMINARY BIOLOGY II
NUMBER OF CREDITS: 0
PREREQUISITES: CSEC OR EQUIVALENT PASS IN BIOLOGY
COURSE DESCRIPTION: Introduction to the Animal Kingdom; relationships between structure and function of the mammalian body including the gross anatomy and tissue structure of the various organ systems. Basic principles of Mendelian and Molecular genetics including the physical and chemical basis of inheritance; DNA replication, recombinant DNA and DNA fingerprinting. Introduction to Ecology including ecosystems, energy flow and trophic levels, nutrient cycling and environmental issues.
Assessment:

Coursework		50%
Theory	20%	
Practical	30%	
Final Examination		50%

LEVEL: I
SEMESTER: 1
COURSE CODE: BIOL 1065
COURSE TITLE: DIVERSITY OF PLANTS AND ANIMALS
NUMBER OF CREDITS: 4
PREREQUISITES: PASSES IN 2 CAPE/GCE A-LEVEL SUBJECT OR EQUIVALENT
COURSE DESCRIPTION: An introduction to the diversity of plants and animals. The characteristics, range of structure, reproduction, life cycles and habits of selected plant and animal groups will be covered.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: BIOL 1262
COURSE TITLE: LIVING ORGANISMS I
NUMBER OF CREDITS: 3
PREREQUISITES: (CAPE BIOLOGY (UNITS I AND II) OR (BIOL 0061 & BIOL 0062) OR GCE A-LEVEL BIOLOGY
COURSE DESCRIPTION: An introduction to the major groups of prokaryotes, autotrophic protists and plants, their evolutionary associations, and adaptive radiation. Explores ideas about the origin of the prokaryotes and the evolution and diversity of photosynthetic organisms. It is a prerequisite for advanced biology courses in the Department of Life Sciences.
Assessment:

Coursework		50%
Theory	30%	
Practical	20%	
Final Examination		50%

LEVEL: I
SEMESTER: 1
COURSE CODE: BIOL 1263
COURSE TITLE: LIVING ORGANISMS II
NUMBER OF CREDITS: 3
PREREQUISITES: (CAPE BIOLOGY (UNITS I AND II) OR (BIOL 0061 & BIOL 0062) OR GCE A-LEVEL BIOLOGY
COURSE DESCRIPTION: An introduction to the diversity of animals and fungi. Students are introduced to animals, their evolutionary associations, and adaptive radiation; and fungi as decomposers, symbionts, and pathogens. It is a prerequisite for advanced biology courses in the Department of Life Sciences
Assessment:

Coursework		50%
Theory	30%	
Practical	20%	
Final Examination		50%

LEVEL: I
SEMESTER: 2
COURSE CODE: BIOL 1362
COURSE TITLE: BIOCHEMISTRY I
NUMBER OF CREDITS: 3
PREREQUISITES: (CAPE BIOLOGY (UNITS I AND II) OR (BIOL 0061 & BIOL 0062) OR GCE A-LEVEL BIOLOGY
COURSE DESCRIPTION: This course provides an introductory treatment of concepts in Biochemistry. In many regards, students will be learning a vast new language as well as new insight into the molecular logic of life - how the structure/form of molecules is related to their diverse functions.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: I
SEMESTER: 2
COURSE CODE: BIOL 1364
COURSE TITLE: GENETICS I
NUMBER OF CREDITS: 3
PREREQUISITES: (CAPE BIOLOGY (UNITS I AND II) OR (BIOL 0061 & BIOL 0062) OR GCE A-LEVEL BIOLOGY
COURSE DESCRIPTION: This course aims to present an introduction to the basic principles of genetics and will equip students with the necessary foundation for advanced level courses in biology and biochemistry.
Assessment:

Coursework	50%
Final Examination	50%

LEVEL: I
SEMESTER: 2
COURSE CODE: BIOL 1462
COURSE TITLE: GENERAL ECOLOGY AND BIOMETRY
NUMBER OF CREDITS: 6
PREREQUISITES: CAPE/GCE A-LEVEL PASS IN BIOLOGY OR ENVIRONMENTAL SCIENCE OR PASSES IN BIOL0061 & BIOL0062, OR BIOL 1065 OR EQUIVALENT.
COURSE DESCRIPTION: An introductory treatment of ecology and data analysis. Topics include population ecology, community ecology, ecosystem ecology, geographic ecology, descriptive statistics, inferential statistics, independence and probability, simple linear regression and correlation.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: I
COURSE CODE: BIOL 2061
COURSE TITLE: CELL & DEVELOPMENTAL BIOLOGY
NUMBER OF CREDITS: 3
PREREQUISITES: BIOL1263 or BIOL1261 or (BIOL1065 and AGRI1012) and either BIOL1362 and BIOL1364 or BIOL1061.
COURSE DESCRIPTION: The course begins with a review of the structure and function of cellular membranes and organelles and the role of the cytoskeleton in cell shape and motility. The fundamental processes operating during embryonic development and cellular differentiation of plants and animals will then be examined. The principles of development will be considered at the organismal, cellular and molecular levels for a complete understanding of developmental processes. Students will be introduced to important experiments that have led to an understanding of the basic principles of development. The application of stem cells in research and associated ethical considerations will form the basis of class discussions and debates.
Assessment:

Coursework	50%
Final Examination	50%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2062
COURSE TITLE: FRESHWATER BIOLOGY
NUMBER OF CREDITS: 4
PREREQUISITE: BIOL 1462
COURSE DESCRIPTION: The hydrological cycle. The physical properties of water. Chemical composition of inland waters. Standing waters: stratification and mixing. Running waters: longitudinal zonation. Characteristics of freshwater wetlands, tropical flood plains, temporary pools, intermittent streams, athalassic lakes. Community structure, organisation and community metabolism in freshwater habitats. Human influences in freshwaters: fisheries, pollution.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTERS: 1
COURSE CODE: BIOL 2063
COURSE TITLE: MARINE ECOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1462 - AT LEAST GRADE B
COURSE DESCRIPTION: Topics on basic oceanography including bathymetry and topography of the ocean floor; plate tectonics and continental drift; physical and chemical properties of sea water; atmospheric and oceanic circulation; tides; form and function of planktonic organisms; primary and secondary organic production and zooplankton distribution including sub tidal shallow sea, deep sea, hydrothermal vent communities and inter tidal benthic communities.; Coral reef biology; biology of marine mammals.
Practicals include time at sea.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2162 (DISCONTINUED WITH EFFECT FROM 2013/14)
COURSE TITLE: ADVANCED GENETICS
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL1061 OR BIOL1364 OR (AGRI 1013 AND AGRI 1011)
COURSE DESCRIPTION: A study of prokaryotic and eukaryotic genetics. Topics include DNA structure and replication; gene expression and regulation; recombination in prokaryotes, complementation and recombination mapping, gene fine structure analysis and evolution of the concepts of a gene; changes in chromosome structure and number - their transmission and evolutionary significance.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2163
COURSE TITLE: BIOSTATISTICS
NUMBER OF CREDITS: 3
PREREQUISITES: MATH 1115 or MATH 1125 or AGRI 1003 or Unit I or II CAPE Pure Mathematics or Unit I or II CAPE Applied Maths or Cambridge GCE A'level Mathematics or A/O' Level Add Maths or equivalent and 9 Credits of Level 1 Life Sciences courses chosen from the following: BIOL 1262, BIOL 1263, BIOL 1364, BIOL 1362, BIOL1261 and BIOL1061.
COURSE DESCRIPTION: This course introduces statistical concepts and analytical methods that can be applied to data in the biological, life sciences and environmental sciences. It will teach the basic concepts of experimental design, quantitative analysis of data, and statistical inferences. This course emphasises applications and will help students to statistically evaluate data from biological experiments. Assessment is designed to make students work continuously with the course materials, exploring and critically analysing research and real world data. Assessment will be continuous through assigned problem sheets allowing continuous feedback and guidance on problem solving techniques.
Assessment:

Coursework	50%
Final Exam	50%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2164
COURSE TITLE: PRINCIPLES OF MOLECULAR BIOLOGY
NUMBER OF CREDITS: 3
PREREQUISITES: Either BIOL 1362 and BIOL 1364 or BIOL 1061
COURSE DESCRIPTION: This course provides an introduction to recombinant DNA technology, R-DNA cloning, and applications of R-DNA technology. It examines the importance of restriction endonucleases in gene cloning, methods of construction of vectors and their applications in developing gene libraries. The methods of screening and enrichment of libraries are also examined. The principles of the Polymerase Chain Reaction (PCR) and its applications including paternity testing and fingerprinting, are also discussed. The principles of sequencing and the expansion of next-generation sequencing techniques are examined. Approaches to locating genes, including map-based gene isolation, and methods of regulating gene expression, including RNAi, co-suppression, and over-expression are discussed using detailed examples. All techniques are further examined under general and holistic approaches to studying the genome, through forward and reverse genetics approaches, functional genomics, transcriptomics, proteomics and metabolomics. The theoretical principles discussed during the lectures are reinforced by practical exercises and assessment involving quizzes, lab reports and discussions.
Assessment:

Coursework	50%
Final Exam	50%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2165
COURSE TITLE: GENETICS II
NUMBER OF CREDITS: 3
PREREQUISITES: BIOL 1364 or BIOL 1061 and 6 credits from among the following courses: BIOL 1262, BIOL 1263, BIOL 1362 or BIOL 1261.
COURSE DESCRIPTION: The major topics of the course are cytogenetics (including epigenetics and developmental genetics), prokaryotic/ viral genetics, and molecular genetics (including genomics). Cytogenetics explores chromosomal macromutations (chromosomal deletions, duplications, inversions and translocations) and their associated cytogenetic effects on plants and animals. Epigenetics and developmental genetics is a new area of study that explains the environmental influence on chromatin dynamics, DNA methylation, development and ultimately on inheritance. An introductory treatment of developmental genetics is also given to understand master control genes (homeotic genes) that regulate a cascade of genes that control development. Prokaryotic/ viral genetics provides insights into prokaryotic/ viral reproduction, recombination; genetic complementation, mapping; and genetic regulation. Molecular genetics provides the fundamental basis for the understanding of Molecular Biology and as such deals with DNA replication, transcription, translation and controls. Genomics provides an insight into where genetics is evolving (including an introduction to applications).
Assessment:

Coursework	50%
Final Examination	50%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2262
COURSE TITLE: EVOLUTIONARY BIOLOGY
NUMBER OF CREDITS: 3
PREREQUISITES: BIOL 1364 or BIOL 1061 and 6 credits from among the following courses: BIOL 1262, BIOL 1263, BIOL 1362 or BIOL 1261.
COURSE DESCRIPTION: After a historical introduction, about one-quarter of the course is devoted to population genetics and the workings of natural selection as the basis for understanding evolutionary mechanisms and patterns. This leads to treatment of the nature of species, the roles of fossils in understanding past evolutionary patterns, special forms of evolution and phylogenetic analysis.
Assessment:

Coursework	50%
Final Examination	50%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2263
(DISCONTINUED WITH EFFECT FROM 2013/14)
COURSE TITLE: GENERAL MICROBIOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL1061 OR BIOL1261 OR AGRI 1012
COURSE DESCRIPTION: An overview of the biology, taxonomy and phylogeny of the bacteria, fungi and viruses. Bacterial genetic recombination, growth, nutrition as well as carbon and energy metabolism. Molecular-based methods used in analytical and diagnostic microbiology.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2265
COURSE TITLE: FUNDAMENTALS OF MICROBIOLOGY
NUMBER OF CREDITS: **3**
PREREQUISITES: Either BIOL 1262 and BIOL 1263 or BIOL 1261 or (BIOL 1065 and AGRI 1012) and either BIOL 1362 and BIOL 1364 or BIOL 1061.
COURSE DESCRIPTION: An overview of the biology, taxonomy and phylogeny of bacteria, fungi and viruses. Topics covered include bacterial carbon and energy metabolism, as well as genetic recombination, growth and nutrition. The course covers the principles of classical and molecular-based methods used in the identification and enumeration of microorganisms.
Assessment:

Coursework	50%
Final Exam	50%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2360
COURSE TITLE: BIOCHEMISTRY IIA
NUMBER OF CREDITS: 3
PREREQUISITES: Either BIOL 1362 or BIOL 1061 and either CHEM 1062 or CAPE Chemistry or CHEM 0060 and CHEM 0061 and either BIOL 1262 or BIOL 1263 or BIOL 1261 .
COURSE DESCRIPTION: This is a core course for the Biology Degree/Major in the Department of Life Sciences. It explores questions such as– Why is life thermodynamically possible? It also examines how we digest and metabolize sugars, fats and proteins. Subsequently, it discusses the roles of the main hormones involved in the fed and fasting states and finally it looks at two common metabolic disorders in the Caribbean, diabetes and obesity. Materials covered in this course will be an asset for students who wish to further their studies in fields of medicine or nutrition or wish to pursue careers in teaching or the pharmaceutical industry.
Assessment:

Coursework	50%
Final Exam	50%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2361
(REMEDIAL – ONLY FOR REPEATERS)
COURSE TITLE: BIOMOLECULES AND ENERGY METABOLISM
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1061 OR BIOL 1362
COURSE DESCRIPTION: pH and Buffers, lipids and membranes - structure and function, fluid mosaic model, bioenergetics - thermodynamics; structure, properties and free energies of ATP, ADP and AMP; tricarboxylic acid cycle**,** electron transport and oxidative phosphorylation; proteins; enzymology - regulation of enzyme activity, modification of expression levels of enzymes, protein-protein interaction; integration of metabolism - management and regulation of energy molecules with respect to different metabolic states.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2362
(DISCONTINUED WITH EFFECT FROM 2013/14)
COURSE TITLE: FURTHER METABOLISM AND GENE EXPRESSION
NUMBER OF CREDITS: 4
PREREQUISITES: EITHER BIOL 1061 OR BIOL 1362 AND CHEM 1060. STUDENT MUST HAVE ATTEMPTED BIOL 2363
COURSE DESCRIPTION: Chemistry of nucleic acids, control and regulation of gene expression; microbiology- structure of microorganisms, their morphology and organisation; sensory systems - biochemistry of vision; olfaction and gustation; introduction to neurotransmission; neurotransmitters.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2363
(DISCONTINUED WITH EFFECT FROM 2013/14)
COURSE TITLE: METABOLISM
NUMBER OF CREDITS: 4
PREREQUISITES: CHEM 1060 AND EITHER BIOL 1061 OR BIOL 1362
COURSE DESCRIPTION: Enzymology - regulation of enzyme activity, modification of expression levels of enzymes, protein-protein interaction; Nitrogen metabolism- sources, uses, storage, transportation and excretion; amino acid metabolism - endogenous and exogenous sources, transamination reaction mechanism, degradation, clinical implications of amino acid dysfunctions; porphyrins - synthesis, degradation and clinical implications of biosynthetic and degradation dysfunctions; lipid metabolism- synthesis, degradation, storage, mobilisation; Biosynthesis of carbohydrates - pentose phosphate pathway; gluconeogenesis - mitochondrial and cytoplasmic regulation, glycogen metabolism - degradation and biosynthesis.
Regulation of glycogen metabolism as a case study in control mechanisms; hormones - general characteristics and regulation of hormone action Pathways and control mechanisms for the metabolism of lipids, amino acids and nitrogen. Carbohydrate biosynthesis.. integration of metabolism - management and regulation of energy molecules with respect to different metabolic states.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2364
(DISCONTINUED WITH EFFECT FROM 2013/14)
COURSE TITLE: ADVANCED GENERAL BIOCHEMISTRY
NUMBER OF CREDITS: 4
PREREQUISITES: EITHER BIOL1061 OR BIOL 1362 AND CHEM 1060: STUDENT MUST HAVE ATTEMPTED BIOL 2361 AND BIOL 2363
COURSE DESCRIPTION: Enzyme Mechanisms. Chemical nature of enzyme catalysis. Protein Structure & Function. Protein stability and unfolding. Flexibility of the folded state. DNA/Protein interactions. Determination of protein structures. Plant Hormones. Biochemical Effectors of The Mammalian Circulatory and Respiratory System. Regulation of Metabolism. Control axis for most neuroendocrine hormones.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2365
(DISCONTINUED WITH EFFECT FROM 2013/14)
COURSE TITLE: COMPARATIVE BIOCHEMISTRY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1061 OR AGRI 1013 OR BIOL 1362 AND EITHER CHEM 1062 OR CAPE /GCE A'LEVEL/ PASS IN CHEMISTRY OR (CHEM 0060 & CHEM 0061)
COURSE DESCRIPTION: This course builds on the materials covered in the Year 1 Cell Biology/Biochemistry course and prepares the students majoring in Biology to have a deeper appreciation of the content that will be covered in several core courses (e.g. Molecular Biology, Plant Physiology, Animal Physiology, Plant Biotechnology, and Microbiology). It equips students to appreciate modern Biochemistry and its importance for understanding Biology. By imparting knowledge of the processes taking place at the cellular and organelle level in plants, animals and microorganisms it provides the basis for a deeper understanding of key concepts in Biology viz. Unity in Diversity; structure/Function relationships (Bioselectivity); homeostasis (Equilibrium); Energy relations (Bioenergetics); Rate control; Signaling (Inter-and intra-cellular communication). Topics include a more in-depth coverage of the major biomolecules from a comparative perspective with emphasis on their structure/function relationships; enzyme mechanism and control of enzyme activity; selected pathways of carbohydrate, nitrogen and lipid Metabolism; cell signaling and integrated metabolism.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2461
COURSE TITLE: HUMANS AND THE ENVIRONMENT
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1462
COURSE DESCRIPTION: Evolution of humans and human races and origin of diversity. Anatomical, physiological and cultural adaptations to diverse environments. Ecology of human diseases and health. Human population demography and human population-resources relationships. Technological development and its impacts on the environment and human population. The future of human populations.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: BIOL 2462
COURSE TITLE: CARIBBEAN ISLAND ECOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1462 (AT LEAST A GRADE B)
COURSE DESCRIPTION: This advanced course treats the islands of the Caribbean within a global perspective. Its subject matter is the special nature of island environments and their biotas, and its aim is an understanding of the distributions and ecological relationships of island plants and animals through an analysis of their origins, evolutionary past population biology and community structure. The course is expected to integrate much of the knowledge that advanced undergraduates have amassed.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2464
COURSE TITLE: FUNDAMENTALS OF ECOLOGY
NUMBER OF CREDITS: 3
PREREQUISITES: (BIOL 1262 AND 6 credits from (BIOL 1263 OR BIOL 1362 OR BIOL 1364) OR (ESST 1001 AND 6 credits from (ESST 1000 OR ESST 1002 OR ESST 1006
COURSE DESCRIPTION: An introduction to the science of ecology and its domain. Geographic range, habitat, and niche; influences of the abiotic and biotic environment. Estimating the abundance and pattern of populations. Population structure and demography; growth models, life tables and resource allocation patterns. Species interactions; competition, predation, commensalism and mutualism. The ecological community; concepts, classification, and attributes, ecological succession. Primary and secondary production, trophic levels, and ecological efficiencies. Nutrient cycles and energy flow.
Assessment:

Coursework	50%
Final Examination	50%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2761
(DISCONTINUED WITH EFFECT FROM 2013/14)
COURSE TITLE: PLANT PHYSIOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1061 OR (BIOL1362 AND BIOL1364) AND BIOL 1764 OR BIOL 1261 OR BIOL1065 AND AGRI 1012
COURSE DESCRIPTION: An advanced treatment of plant physiology and selected aspects of cellular metabolism. Topics include water relations of cells, tissues and whole plants; germination, seedling development, growth, differentiation and growth analysis; mineral uptake and plant nutrition; photosynthesis, translocation and sink / source relationships; roles and applications of hormones and growth regulators.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2764
COURSE TITLE: PHYSIOLOGY OF PLANTS
NUMBER OF CREDITS: 3
PREREQUISITES: BIOL1262 or BIOL 1261 or (BIOL 1065 and AGRI 1012) and either BIOL 1364 and BIOL 1362 or BIOL1061
COURSE DESCRIPTION: This course deals with how plants gather the resources they need to grow and survive. The first part provides the essential concepts of plant physiology with comprehensive coverage of water relations, mineral uptake, and photosynthesis. The second part explores how these resources are translated into plant growth and provides an introduction to how plants respond to environmental signals at the whole plant level. Each topic is covered by lectures and supported by online material and by recommended reading. The Practicals complement the lecture topics and provide an opportunity gain valuable practical skills in the life sciences.
Assessment:

Coursework	50%
Final Examination	50%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2862
(DISCONTINUED WITH EFFECT FROM 2013/14)
COURSE TITLE: ANIMAL PHYSIOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1861 OR BIOL 1261 OR AGLS 1001 OR BIOL 1065 AND AGRI 1012
COURSE DESCRIPTION: Processes and fundamental concepts in gaseous exchange, metabolism, temperature regulation, osmoregulation, haemodynamics of blood circulation and fundamental concepts in sensory, neural and muscle physiology.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2864
(DISCONTINUED WITH EFFECT FROM 2013/14)
COURSE TITLE: PARASITISM
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1861 OR BIOL1261 OR BIOL 1261 OR BIOL 1065 AND AGRI 1012 OR AGLS 1001
COURSE DESCRIPTION: Intimate association among animals and problems associated with forming working definitions.
Symbiosis: commensalism, mutualism, brood parasitism and parasitoids.
Parasitism: ecto-and endoparasitism. Range and characteristics of parasitic organisms. Host-parasite interactions. Behavioural aspects of organism associations. Parasite ecology and evolution of intimate associations.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2866
(DISCONTINUED WITH EFFECT FROM 2013/14)
COURSE TITLE: ENTOMOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1861 OR BIOL1261 OR BIOL 1065 AND AGRI 1012
COURSE DESCRIPTION: The nature of insects and their success. Review of external morphology. Flight. Review of organ systems and physiology. Development, growth, moulting and metamorphosis. Sensation and perception. Evolutionary survey of major orders.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: BIOL 2867
COURSE TITLE: PHYSIOLOGY OF ANIMALS
NUMBER OF CREDITS: 3
PREREQUISITES: BIOL 1263 and BIOL 1362 and either BIOL 1364 or ESST 1001.
COURSE DESCRIPTION: Physiology of Animals is the study of how animals' function. The course provides an introduction to molecular and cellular physiology and the principal physiological systems in animals, and how these systems function to maintain homeostasis in various environments. It covers fundamental concepts in osmoregulation and excretion, neurophysiology, muscle physiology, respiration, thermo-physiology, circulation and gas transport, endocrinology, and cardiovascular physiology. It also looks at some of the major stressors on physiological processes and how animals have been able to deal them. Typical stressors that are covered include osmotic pressures, water limitation, hypoxia, altitude, depth, temperature extremes and exercise. While animal physiology examines systems and processes common to all animal species, this course will focus on vertebrates, with a special emphasis on mammalian systems.
Assessment:

Coursework	50%
Final Exam	50%

LEVEL: III
SEMESTER: 1
COURSE CODE: BIOL 3061
COURSE TITLE: MOLECULAR BIOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 2162 OR BIOL 2362
COURSE DESCRIPTION: An advanced treatment of gene and genome organisation in eukaryotes and gene regulation in prokaryotes and eukaryotes. Recombinant DNA technology and its application, including vectors, restriction enzymes and restriction mapping, construction of libraries and gene isolation, construction and use of RFLP maps. DNA fingerprinting, analysis and sequencing of genes. PCR and its applications.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3062
COURSE TITLE: CONSERVATION BIOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1462 OR EQUIVALENT
STUDENTS ARE ALSO ADVISED TO DO AGRI 1013 OR BIOL 1362
COURSE DESCRIPTION: Principles of conservation biology including types and distribution of biodiversity, loss of biodiversity and its consequences; endangered species; population viability analysis and monitoring.
Conservation practices: protected areas, biosphere reserves, restoration ecology; ex situ conservation strategies and genetic engineering; establishing new populations by translocation and reintroduction.
Legal and institutional aspects: Land tenure systems and species and habitat protection; national legislation; conservation authorities and organisations; international programmes; international conservation treaties and conventions; conservation education.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 3 (SUMMER)
COURSE CODE: BIOL 3068
COURSE TITLE: FIELD COURSE IN NEOTROPICAL ECOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1462 AND 8 CREDITS OF ADVANCED LEVEL LIFE SCIENCES COURSES, OR PERMISSION OF THE HEAD OF DEPARTMENT
COURSE DESCRIPTION: Introduction to focal group, ecological principles illustrated by focal group, specialised features of focal group, field research projects (aquatic or terrestrial). Students must consult with the course coordinator before registering for this course.
Assessment:

Coursework		100%
• Oral Report	10%	
• Written Work	90%	

LEVEL: III
SEMESTERS: 1 & 2
COURSE CODE: BIOL 3069
COURSE TITLE: RESEARCH PROJECT
NUMBER OF CREDITS: 4
PREREQUISITES: AT LEAST A B AVERAGE IN LEVEL II LIFE SCIENCES COURSES OR PERMISSION OF THE HEAD OF DEPARTMENT. STUDENTS WISHING TO DO THIS COURSE ARE STRONGLY ENCOURAGED TO READ AN ELEMENTARY STATISTICS COURSE.
COURSE DESCRIPTION: Short lecture course (6-8 hours): Aims and means of assessing project feasibility; Methods of investigation; Experimental design; Project reporting and presentation. An approved investigation of a problem in biology and a written report thereon.
Students must consult with the course coordinator before registering for this course
Assessment:

In-course assessment		40%
Project Proposal	10%	
Literature Review	10%	
Oral Presentation	20%	
Project Report		60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3262
COURSE TITLE: MICROBIAL BIOTECHNOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 2261 OR BIOL2263 OR BIOL 2363 AND BIOL 2362 OR AGRI 1012
COURSE DESCRIPTION: Advanced treatment of applications of microbiology including microbial ecology and symbiotic relationships; pathogenesis in plants / animals; principles of immunology; food spoilage and processing; single cell protein production, sewage treatment; microbial leaching and genetic engineering. Other special topics dealt with are photosynthesis - anaplerotic and respiratory systems in bacteria; use of radioisotopes in microbiology; Strictland reactions; amino acid production, industrial - and organic acid fermentation.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3264
COURSE TITLE: FUNCTIONAL DESIGN IN BIOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1261 OR (BIOL 1065 AND AGRI 1012)
COURSE DESCRIPTION: Size as a consideration in the design of organisms, materials in nature, the arrangement of structure, physics of support, mechanics of motility, viscosity and flow, pressure and flow. Examples are taken from various taxa across kingdoms, as appropriate, to Illustrate the topics discussed.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: BIOL 3361
COURSE TITLE: APPLIED BIOCHEMISTRY
NUMBER OF CREDITS: 4
PREREQUISITE: BIOL 2364
COURSE DESCRIPTION: Animal cell culture and virology. Introduction to cell and tissue culture, practical aspects and applications; introduction to virology, effect of viruses on host cells. Immunology: natural and acquired immunity both humoral and cellular; antibody structure and function, B cells - generation of antibody diversity; function of T cells; complement - activation, control and biological effects. HLA - nomenclature, typing and its uses, autoimmunity, AIDS. Animal detoxification - absorption & distribution of xenobiotics, toxic effects, metabolism.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3362
COURSE TITLE: SELECTED TOPICS IN BIOCHEMISTRY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 2361 AND BIOL 2364
COURSE DESCRIPTION: The areas of study may vary slightly from year to year but will usually include:- Metabolic diseases- obesity and diabetes mellitus. Mechanisms of signal transduction and apoptosis, biochemistry of cancer and therapy. Neurochemistry, and mechanisms of signal transduction.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3364
COURSE TITLE: CLINICAL BIOCHEMISTRY
NUMBER OF CREDITS: 4
PREREQUISITE: BIOL 2363
COURSE DESCRIPTION: Clinical analytical methods**;** pathologic processes. Distribution of water and electrolytes and their regulation; renal function **-** structure and function of the kidney, urinalysis, kidney diseases; acid-base balance **-** blood buffer systems, disturbances of blood pH; liver - anatomy and functions, acute liver disease, diseases of the biliary system, chronic liver disease, tests for liver function and differential diagnosis of liver disease; thyroid - thyroid hormone biosynthesis and storage; secretion, transport and metabolism of thyroid hormones. Thyroid disorders and tests of function; steroids - regulation of steroid biosynthesis, metabolism of steroids. Disorders of the adrenal cortex, testis, ovary. Catecholamines; biosynthesis and physiological effects; disorders of secretion. Plasma lipoproteins - biosynthesis, composition, physical properties and metabolism of lipoproteins. Mechanisms of lipid transport in plasma. Lab tests for plasma lipid abnormalities.Ca^{2+}, PO_4^{2-} and Mg^{2+} metabolism. Biological functions of calcium phosphate. Ca^{2+} homeostasis - conditions of Mg^{2+} deficiency and excess; clinical enzymology. Selection of plasma enzyme tests. Clinically important enzymes.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3461
COURSE TITLE: COASTAL ECOSYSTEM MANAGEMENT
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 2063
COURSE DESCRIPTION: Coastal resources: An examination of the natural resources associated with beaches, coral reefs, wetlands, estuaries, harbours and other shoreline features. Pollution ecology, pollutants, especially organic, oil, pesticide, heavy metal, physical and thermal pollution, their sources, effects and remedies.
Resources management practices: Coastal surveys, environmental monitoring, water quality criteria, zoning, legislation and enforcement. Marine parks and conservation areas - purpose, criteria, development and management.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: BIOL 3463
COURSE TITLE: POLLUTION & ENVIRONMENTAL MANAGEMENT
NUMBER OF CREDITS: 4
PREREQUISITE: BIOL 2461
COURSE DESCRIPTION: Ecotoxicology. Ecotoxicity testing. Epidemiology and public health. Introduction to environmental law. Environmental regulations. Ecological crime. Environmental sampling and testing methods for water, air, sediment, noise, radioactivity. Environmental engineering background. Physiochemical and biological treatment methods for sewage and industrial waste.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3464
COURSE TITLE: TROPICAL FOREST ECOLOGY AND MANAGEMENT
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1065 OR BIOL 1462 OR BIOL1261
COURSE DESCRIPTION: An advanced treatment of topics in tropical forest ecology and management. Topics include biotic and abiotic factors, biotic interactions including regulation of biodiversity, succession and regeneration and nutrient cycling in tropical forest ecosystems. Disturbances and tropical forest management including the history of forestry in the wet tropics; tropical forest inventory; tropical forestry towards sustainability; plantation forestry in the wet tropics; social dimensions and the future of tropical forest management.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3662
COURSE TITLE: EVOLUTION AND BIOSYSTEMATICS
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1061 OR BIOL 1364 OR (AGRI 1011 AND AGRI 1013)
COURSE DESCRIPTION: An advanced treatment of population genetics, evolution and methods of biosystematics. Topics include the H-W model; evolutionary forces; neutral theory vs. selectionist theory; macroevolution; co-evolution and biogeography; speciation: the biological species concept, isolating mechanisms; within species variation and micro taxonomy; morphological, chemical and molecular systematics; derivation of cladograms; formulation classifications; biological nomenclature. Case studies.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3762
COURSE TITLE: PLANT BIOTECHNOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 2162 OR BIOL 2362 & BIOL 2363
COURSE DESCRIPTION: Advanced treatment of topics in plant tissue culture and plant genetic engineering and their applications. Topics include an overview of plant tissue culture and its applications in micro propagation, disease-elimination, virus-indexing and crop improvement. Overview of methods of plant transformation - biology, efficiency and predictability. Evaluation of transgenic plants. Application of genetic engineering in virus-, insect-, herbicide- resistance; in enhancing nitrogen fixation, photosynthesis, nutrition and post-harvest qualities; and in conservation and management of plant genetic resources. Intellectual property rights and safe release of genetically modified organisms. Socio-economic considerations.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: BIOL 3763
COURSE TITLE: CROP IMPROVEMENT (FORMERLY PLANT BREEDING)
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 2162 OR AGCP 2001
COURSE DESCRIPTION: Objectives of plant breeding; Crop evolution and genetic variability; genetic erosion and germplasm conservation. Creating genetic variability - mutagenesis, somaclonal variation, inter- and intra-specific hybridisation. Reproductive isolation systems and their manipulation; Principles of selection-factors affecting genetic gain, selection methods, marker assisted selection and response to selection. Principles and methods of breeding self-pollinated cross-pollinated and vegetatively propagated crops. Case studies. Breeding for disease resistance. Impact of biotechnology on plant breeding. Seed production and release.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3766
COURSE TITLE: PLANT ECOPHYSIOLOGY
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1462 AND BIOL 2761 OR AGRI 1012 AND AGRI 1016
COURSE DESCRIPTION: This advanced course focuses on the interaction between plants and their environment, exploring the diverse ways that plants adapt to and manipulate their surroundings. Ecophysiology provides a framework for the many applications of plant science in the management of natural and manmade ecosystems. The course includes a large case study component that illustrates the importance of current research in supporting a range of sustainable ecosystems, from rainforest stands to cultivated fields. Students participate in developing their own case studies exploring the role of plant research in meeting the challenge of global climate change.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: BIOL 3767
COURSE TITLE: BIOLOGY OF PLANT PATHOGENS
NUMBER OF CREDITS: 4
PREREQUISITES: EITHER (BIOL 1261 AND BIOL 1061 OR (BIOL 1362 AND BIOL 1364)) OR (AGRI 1012; AGRI 1011 AND AGRI 1013)
COURSE DESCRIPTION: Biology of plant pathogens; Classification of plant pathogens; their cellular organization, structure; Important pathogens; Pathogen-life cycles, disease cycle; Symptomology; Epidemiology, spread, survival; Host-pathogen interactions, mechanism of infection, physiological and biochemical processes of infection; Host resistance and defense mechanisms; Principles of plant disease/pathogen management; Molecular-based pathogen detection and disease diagnosis.
Assessment:

Coursework	50%
Final Examination	50%

LEVEL: III
SEMESTER: 1
COURSE CODE: BIOL 3867
COURSE TITLE: ANIMAL BEHAVIOUR
NUMBER OF CREDITS: 3
PREREQUISITES: BIOL 2861 OR BIOL 2862
COURSE DESCRIPTION: Approaches to animal behaviour. Stimulus perception, processing, and motor control. The organisation of behaviour, and motivation. Instinct and learning. Development of behaviour in the individual. The evolution of behaviour. Signals and communication. Behavioural ecology of feeding, defence, reproduction and parental care. Social behaviour in insects and vertebrates.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: BIOL 3863
COURSE TITLE: TROPICAL AQUACULTURE
NUMBER OF CREDITS: 4
PREREQUISITES: BIOL 1861 OR BIOL1261 OR BIOL1065 OR AGLS 1001
COURSE DESCRIPTION: History, status and future of tropical aquaculture. Hatchery design and operation. Farm and pond design and operation. Water quality management in tropical fish ponds. Fish feed technology. Tropical fish diseases and control. Biology and culture of selected tropical finfish, shellfish, sea-weed and aquatic reptiles. Polyculture and integrated aquaculture. The tropical ornamental fish trade. Environmental impacts.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: BIOL 3864
COURSE TITLE: FISHERIES BIOLOGY & MANAGEMENT
NUMBER OF CREDITS: 4
PREREQUISITE: BIOL 2063
COURSE DESCRIPTION: History, status and future of global fisheries. Fishing methods. Caribbean fisheries, especially in Trinidad & Tobago. Fish population dynamics, recruitment, fish stock assessment and fish migration. Fish handling, processing and the process of spoilage; Fisheries yield-prediction model. Management of tropical fisheries. Critical fish habitat. Law of the sea and its implications.
Practicals include time at sea.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: BMET 1004
COURSE TITLE: INTRODUCTORY HUMAN ANATOMY AND PHYSIOLOGY I
NUMBER OF CREDITS: 3
PREREQUISITES: CAPE PHYSICS (UNITS I AND II) OR CAPE MATHEMATICS (UNITS I AND II) AND CSEC (CXC) PHYSICS OR PHYS 0070 AND PHYS 0071 OR THEIR EQUIVALENT
DEPARTMENT RESPONSIBLE: PHYSICS
COURSE DESCRIPTION: It is essential that biotechnology personnel, in any form of the use of the body, should be more than merely acquainted with the human body and the relationship of its parts to the total working of the healthy person. Scientific background will underscore student opportunities to think critically, from the perspective of the human organism functioning independently, the interface between the individual and his/her immediate environment, including interactive relationships with technology, and global environment. This course integrates several disciplines including the basic gross anatomy and histology of all the system, as well as physiology of the human body. Contemporaneous issues of homeostasis, ergonomics, adaptation and health will be discussed in the context of today's emerging environmental and inter-organism impacts in the quality of life. This course comprises of: General Introduction of Gross anatomy, concepts and principles of cell biology; histology; the integumentary, skeletal, muscular, and nervous systems; special senses; and the endocrine system.
This course will be assessed through in-course assignments, in-course laboratory exercises and a final examination.
Assessment:

Coursework	40%
Final Examination (One 2-hour paper)	60%

* **PLEASE NOTE THE LAB AND THEORY COURSE WOULD BE TAUGHT AT MT. HOPE. CONTACT THE PHYSICS OFFICE FOR FURTHER INFORMATION.**

LEVEL: I
SEMESTER: 2
COURSE CODE: BMET 1005
COURSE TITLE: INTRODUCTORY HUMAN ANATOMY AND PHYSIOLOGY II
NUMBER OF CREDITS: 3
PREREQUISITES: CAPE PHYSICS (UNITS I AND II) OR CAPE MATHEMATICS (UNITS I AND II) AND CSEC (CXC) PHYSICS OR PHYS 0070 AND PHYS 0071 OR THEIR EQUIVALENT
DEPARTMENT RESPONSIBLE: PHYSICS
COURSE DESCRIPTION: Introductory Human Anatomy and Physiology II is an extension of its first semester counterpart Introductory Human Anatomy and Physiology I.
Introductory Human Anatomy & Physiology II offers a broad overview of the structure (anatomy) and function (physiology) of tissues, organs and organ systems. The systems covered in this course are: heart, blood and circulatory system; the lymphatic system, immune System and disease; the digestive System and nutrition; the excretory System, kidneys and fluid balance; and the respiratory system, lungs and respiration. The course concludes with human reproductive anatomy and physiology.
This course will be assessed through in-course assignments, in-course laboratory exercises and a final examination.
Assessment:

Coursework	40%
Final Examination (One 2-hour paper)	60%

* **PLEASE NOTE THE LAB AND THEORY COURSE WOULD BE TAUGHT AT MT. HOPE. CONTACT THE PHYSICS OFFICE FOR FURTHER INFORMATION.**

LEVEL: 0 (PRELIMINARY)
SEMESTER: 1
COURSE CODE: CHEM 0060
COURSE TITLE: PRELIMINARY CHEMISTRY I
NUMBER OF CREDITS: 0
PREREQUISITES: CSEC OR EQUIVALENT PASS IN CHEMISTRY
COURSE DESCRIPTION: Theory: Foundations of Chemistry. Descriptive inorganic and organic chemistry. Energy changes in chemical reactions. Chemical equilibria. Chemical kinetics.
Practical: Forty-eight (48) hours of practical work
Assessment:

Practical Coursework	15%
Theory Coursework	10%
Final Examination - 3-hour written paper	75%

LEVEL: 0 (PRELIMINARY)
SEMESTER: 2
COURSE CODE: CHEM 0061
COURSE TITLE: PRELIMINARY CHEMISTRY II
NUMBER OF CREDITS: 0
PREREQUISITES: CSEC OR EQUIVALENT PASS IN CHEMISTRY
COURSE DESCRIPTION: Theory: The three physical states of matter. Further introduction to the chemistry of the elements. Properties of solutions. Acid-base systems and buffer systems. Electrical conductance, oxidation-reduction.
Practical: Forty-eight (48) hours of practical work.
Assessment:

Practical Coursework	15%
Theory Coursework	10%
Final Examination - 3-hour written paper	75%

LEVEL: I
SEMESTER: 1
COURSE CODE: CHEM 1062
COURSE TITLE: BASIC CHEMISTRY FOR LIFE SCIENCES
NUMBER OF CREDITS: 3
PREREQUISITES: NONE
COURSE DESCRIPTION: The course is intended to provide students, who have had very little exposure to chemistry and who intend to proceed to degree level in the Life and Health Sciences, with a working knowledge of the basic concepts and principles of Chemistry. Topics of study: atoms, bonding, (ionic and covalent) intermolecular forces, quantifying matter, classes of reactions; properties of ionic and covalent compounds; solution chemistry; acid-base equilibrium; reaction kinetics; thermochemistry; gases; properties and reactions of carbon compounds including alcohols, aldehydes and ketones, carboxylic acids, esters and ethers, amines and amides; amino acids and peptides, natural polymers and stereochemistry.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: CHEM 1065
COURSE TITLE: INTRODUCTION TO CHEMISTRY LABORATORY
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 0060 & CHEM 0061 OR CAPE CHEMISTRY OR EQUIVALENT
COURSE DESCRIPTION: Chemical measures and units, manual graphing and simple statistics, basic chemistry laboratory skills and techniques, experimental planning, design and execution, basic symmetry and symmetry elements.
Practical: Forty-eight (48) hours of practical work.
Assessment:

Practical Coursework	100%

LEVEL: I
SEMESTER: 1
COURSE CODE: CHEM 1066
COURSE TITLE: INTRODUCTION TO CHEMISTRY I
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 0060 & CHEM 0061 OR CAPE CHEMISTRY OR EQUIVALENT
COURSE DESCRIPTION: Atomic structure, group and periodic trends, chemical reactivity, fundamentals of bonding.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: I
SEMESTER: 2
COURSE CODE: CHEM 1067
COURSE TITLE: INTRODUCTION TO CHEMISTRY II
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 0060 & CHEM 0061 OR CAPE CHEMISTRY OR EQUIVALENT
COURSE DESCRIPTION: Fundamentals of organic chemistry, introduction to chemical thermodynamics, reaction kinetics, chemical equilibria, d-block elements and coordination chemistry.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: I
SEMESTER: 2
COURSE CODE: CHEM 1068
COURSE TITLE: INTRODUCTION TO CHEMISTRY III
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 0060 & CHEM 0061 OR CAPE CHEMISTRY OR EQUIVALENT
COURSE DESCRIPTION: Particle in a box, eigenvalues, harmonic oscillators, heat capacity, entropy, Gibbs free energy. Organic chemistry: addition, substitution, elimination and hydrolysis reactions.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: CHEM 2015 (REMEDIAL ONLY)
COURSE TITLE: SPECTROSCOPY
NUMBER OF CREDITS: 4
PREREQUISITES: CHEM 1060 AND CHEM 1061
COURSE DESCRIPTION: Theory and Instrumentation. Application of UV-visible spectra to transition metal ions and organic molecules. I.R. spectra and their use in structural elucidation for organic, organometallic and inorganic systems. N.M.R. spectra of ^{1}H species and their applications to organic and organometallic systems. Other magnetic nuclei, e.g. ^{13}C, ^{31}P and ^{19}F. Mass spectrometry and its application.
Practical: Thirty (30) hours of practical work.
Assessment:

Practical Coursework	25%
Final Examination- 2-hour written paper	75%

LEVEL: II
SEMESTER: 1
COURSE CODE: CHEM 2025
COURSE TITLE: KINETICS AND MECHANISM
NUMBER OF CREDITS: 4
PREREQUISITES: AT LEAST TWO OF CHEM 2160, CHEM 2260 AND CHEM 2360
COURSE DESCRIPTION: Theoretical aspects of chemical kinetics. Techniques for the study of slow and fast reactions. Photochemistry. General factors affecting reaction rates and mechanisms.
Mechanisms of reactions with typical co-ordination polyhedra encountered in organic and inorganic chemistry; e.g., tetrahedral, square planar and octahedral geometries; linear free energy relationship.
Practical: Thirty (30) hours of practical work.
Assessment:

Practical Coursework	15%
Final Examination - 2-hour written paper	85%

LEVEL: II
SEMESTER: 1
COURSE CODE: CHEM 2160 (REMEDIAL ONLY)
COURSE TITLE: MAIN GROUP CHEMISTRY
NUMBER OF CREDITS: 4
PREREQUISITES: CHEM 1060 AND CHEM 1061
COURSE DESCRIPTION: Symmetry theory and point groups. Introduction to the chemistry of the elements. Chemistry of the hydrides, oxides and halides; organometallic chemistry of the p-block elements.
Practical: Thirty (30) hours of practical work.
Assessment:

Practical Coursework	25%
Final Examination - 2-hour written paper	75%

LEVEL: II
SEMESTER: 1
COURSE CODE: CHEM 2170
COURSE TITLE: FUNDAMENTALS OF INORGANIC CHEMISTRY I
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 1065, CHEM 1066, CHEM 1067 AND CHEM 1068 OR CHEM 1060 AND CHEM 1061
COURSE DESCRIPTION: This is part I of two of core inorganic chemistry courses and gives an introduction to fundamental concepts in inorganic chemistry with a focus on descriptive inorganic chemistry and bonding theories both in inorganic molecules and in the solid state. The course is divided into topic themes and includes structure of solids, survey of properties of main group elements, aqueous and redox chemistry of ionic compounds, principles of group theory, descriptive transition metal chemistry the basis of which includes crystal field theory and extending into basic molecular magnetism and electronic spectroscopy. The topics are pursued with a common theme of chemical bonding and structure and the derived chemical properties of compounds of elements across the most of the periodic table.
The assessment approach will be varied and continuous throughout the course and include online quizzes, in-course exams, tutorial worksheets and group research paper.
Assessment:

Coursework	40 %
Final Examination - 2-hour written paper	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: CHEM 2260 (REMEDIAL ONLY)
COURSE TITLE: BASIC ORGANIC CHEMISTRY I
NUMBER OF CREDITS: 4
PREREQUISITES: CHEM 1060
COURSE DESCRIPTION: Aromatic chemistry, carbon-carbon bond formation, principles of organic synthesis, principles of stereochemistry.
Practical: Thirty (30) hours of practical work.
Assessment:

Practical Coursework	15%
Theory Coursework	10%
Final Examination 2-hour written paper	75%

LEVEL: II
SEMESTER: 1
COURSE CODE: CHEM 2270
COURSE TITLE: ORGANIC CHEMISTRY I
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 1065, CHEM 1066, CHEM 1067 AND CHEM 1068 OR CHEM 1060
COURSE DESCRIPTION: This course will be the first of the two basic organic chemistry courses required for students who have completed the Introductory Chemistry programme and wish to pursue a major in chemistry. Students are introduced to the basic reactions, principles and tools which will enable them to devise reasonable schemes for the synthesis of given molecules, to determine the structures of these molecules and to explain the formation of the products obtained from reactions. This will be achieved through six lectures in Stereochemistry, six lectures in Spectroscopy and 12 lectures on Synthetic Design which will focus on applying knowledge of aromatic and carbanion chemistry and retrosynthetic analysis to the synthesis of given organic molecules. There will be twelve weekly tutorials during which assigned problems will be discussed. Students will be assigned to work in small groups on the problems and hand in their solutions before each tutorial.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: CHEM 2360 (REMEDIAL ONLY)
COURSE TITLE: BASIC PHYSICAL CHEMISTRY
NUMBER OF CREDITS: 4
PREREQUISITES: CHEM 1061
COURSE DESCRIPTION: Nuclear chemistry. The behaviour of gases, liquids and solids; principles of surface and colloid chemistry; principles of electrochemistry.
Practical: Thirty (30) hours of practical work.
Assessment:

Practical Coursework	20%
Final Examination-2-hour written paper	80%

LEVEL: II
SEMESTER: 1
COURSE CODE: CHEM 2370
COURSE TITLE: PHYSICAL CHEMISTRY I
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 1065, CHEM 1066, CHEM 1067 and CHEM 1068 OR CHEM 1061
COURSE DESCRIPTION: Introduction and fundamental theory of spectroscopic techniques important to chemists and how the techniques can be used to find out more about atoms and molecules. The course also includes reaction kinetics, particularly its application to real world chemistry problems. This is a core subject area in physical chemistry. The course covers important material that will be needed in subsequent courses in all disciplines of chemistry.
The course is assessed by two in-course examinations, and tutorial activities, along with a final examination.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: CHEM 2460 (REMEDIAL ONLY)
COURSE TITLE: PRINCIPLES OF CHEMICAL ANALYSIS
NUMBER OF CREDITS: 4
PREREQUISITES: CHEM 1060 AND CHEM 1061
COURSE DESCRIPTION: Introduction to qualitative and quantitative analysis; calibration of laboratory equipment; criteria for choice of a method of analysis; good laboratory practices; good measurement practices; methods of quantification; basic statistics in analytical chemistry; errors in chemical analysis; sampling and sample preparation for chemical analyses; applications of spectroscopic and chromatographic methods of analysis.
Practical: Thirty (30) hours of practical work.
Assessment:

Practical Coursework	15%
Theory Coursework	10%
Final Examination - 2-hour written paper	75%

LEVEL: II
SEMESTER: 1
COURSE CODE: CHEM 2470
COURSE TITLE: INTRODUCTION TO ANALYTICAL CHEMISTRY
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 1065, CHEM 1066, CHEM 1067 AND CHEM 1068 or CHEM 1060 AND CHEM 1061
COURSE DESCRIPTION: This course emphasizes classical methods in analytical chemistry. In the first of two units, students are introduced to the basic tools needed in all chemical analyses. The techniques of chemical measurements of mass and volume, for example, are studied, along with relevant units and interconversions. The errors associated with chemical analyses are discussed; students will be able to describe these errors, identify how they can occur in an analysis and suggest methods for minimizing or eliminating them. Simple statistical analysis is also considered in this unit. In the second unit, students are introduced to a survey of classical and modern analytical methods. This is followed by the principles of chemical equilibria, and how these apply to the important classical analytical chemistry methods of gravimetry and titration. The teaching/learning strategies in use in this course are based on the classroom lecture along with small group activities, supported by myeLearning components. The course is assessed by in-course examinations, tutorial activities and participation, along with a final examination.
Assessment:

Coursework	50%
Final Examination - 2-hour written paper	50%

LEVEL: II
SEMESTER: 2
COURSE CODE: CHEM 2471
COURSE TITLE: ANALYTICAL METHODS IN CHEMISTRY I
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 2470
COURSE DESCRIPTION: This is a compulsory course for students who wish to pursue the Minor in Analytical Chemistry, which continues the study of analytical chemistry concepts begun in CHEM 2470. More advanced concepts are presented, including further development of titrimetric techniques, focusing on complexometric titrations. The understanding and use of instrumental techniques begins in this course, with electrochemical methods, basic spectroscopy and separation techniques. The unit on electrochemical methods covers the chemical theory that is exploited in potentiometric and other analytical techniques as well as more applied issues to do with the appropriate use of these methods. The units on basic spectroscopy and separation techniques provide a general introduction to these advanced instrumental techniques. The teaching/learning strategies used in this course are based on the classroom lecture along with small group activities and participation; all of this supported by myeLearning components. The course is assessed by in-course examination, tutorial activities, poster preparation, a literature review and a final examination.
Assessment:

Coursework	50%
Final Examination - 2-hour written paper	50%

LEVEL: II
SEMESTER: 2
COURSE CODE: CHEM 2472
COURSE TITLE: ANALYTICAL CHEMISTRY LABORATORY
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 2470
COURSE DESCRIPTION: This is a compulsory course for students who wish to pursue the Minor in Analytical Chemistry, which provides a general survey of the most common laboratory activities required by the modern analytical chemist. These activities include planning and design, techniques for the acquisition, handling and processing of samples, analytical techniques, data analysis and quality control and quality assurance concepts. The course is organised as a semester-long "research project" with the students working on one site/problem over the whole semester using a range of analytical techniques. In the first year, the site/problem under investigation will be an environmental survey of a contaminated river. Each week a different set of relevant analytical techniques will be emphasised, while some critical areas will be repeated in a variety of labs for better understanding by students. For example, the use of replicates, simple statistical analysis and error evaluation will be conducted in every lab. Group learning is emphasised, as students will carry out all course activities in small groups. The course is assessed entirely by coursework, which consists of a variety of activities; including laboratory skill demonstrations, weekly lab reports, a final lab report and an oral presentation.
Assessment:

Coursework	100%

LEVEL: II
SEMESTER: 1
COURSE CODE: CHEM 2670
COURSE TITLE: ADVANCED CHEMISTRY LABORATORY I
NUMBER OF CREDITS: 1.5
PREREQUISITES: CHEM 1065, CHEM1066, CHEM 1067 and CHEM 1068 or CHEM 1060 and CHEM 1061
COURSE DESCRIPTION: This is a compulsory course for all Level II students in the B.Sc. Chemistry and chemistry major and minor programmes. This course further develops and reinforces basic laboratory skills taught in CHEM 1065. The course also introduces students to new techniques and skills required by a chemist including one synthetic and advanced separation and purification techniques; chemical quantitation; reaction kinetics; spectroscopy and interpretation of spectral data; and basic analytical instrumentation: HPLC, GC, Flame Atomic Absorption, and UV-Visible Spectroscopy The course is assessed on a continuous basis through lab quizzes, practical lab skill exercises, lab reports and oral examinations.
Assessment:

Coursework	100%

LEVEL: II
SEMESTER: 2
COURSE CODE: CHEM 2671
COURSE TITLE: ADVANCED CHEMISTRY LABORATORY II
NUMBER OF CREDITS: 1.5
PREREQUISITES: CHEM 1065, CHEM 1066, CHEM 1067 and CHEM 1068 or CHEM 1060 and CHEM 1061
COURSE DESCRIPTION: This is a compulsory course for Level II students in the B.Sc. Chemistry and chemistry major and minor programmes. In this course students will carry out advanced laboratory techniques experiments in which the lab skills taught in CHEM 1065 and CHEM 2670 will be used together to perform more complex laboratory experiments covering reaction thermodynamics, multistep inorganic/organic reaction syntheses, spectroscopic identification of compounds, spectra interpretation, symmetry and stereochemistry of compounds. The course introduces students to basic spectroscopic instrumentation: mass spectrometry and IR, and ^{1}H NMR spectroscopy as well as experimental design and planning. The course is expected to develop the chemical knowledge and analytical and problem solving skills of students to give them the confidence to work in a chemical environment, to communicate in writing the reasoning used in analyses and conclusions reached from analyses conducted, to evaluate critical information, to use technology to access information effectively and efficiently and to use it in an ethical and legal manner, to be independent thinkers, and to have an appreciation for chemical safety and the environment. The course is assessed on a continuous basis through lab quizzes, practical lab skill exercises, lab reports and oral examinations.
Assessment:

Coursework	100%

LEVEL: II
SEMESTER: 1
COURSE CODE: CHEM 2770
COURSE TITLE: INTRODUCTION TO RESEARCH IN CHEMISTRY LEARNING
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 1065, CHEM 1066, CHEM 1067 AND CHEM 1068 OR CHEM 1060 AND CHEM 1061
COURSE DESCRIPTION: CHEM 2770 is one of an intended series of courses that a student with an interest in the field of Chemical Education will take. This course thus provides an introduction to a variety of research topics in Chemical Education Research (CER). The course begins with an investigation into what exactly is research in Chemistry Education followed by an exploration of the chemical education literature in the following areas: chemistry problem-solving and the development of misconceptions among chemistry learners; the application of learning theories to the practice of chemistry teaching and learning; the use of non-traditional assessment methods in measuring chemistry learning and the impact of CER on college-level chemistry teaching and learning. The topics were chosen as they represent examples of on-going areas of research in the developing field of CER. Learning in this course will be facilitated in large part through interactive weekly discussion forums based on thorough reading of the course materials by all class participants. Students will also experience small-group learning activities during the weekly tutorial sessions. The course will be assessed via a series of exercises that will be conducted during the course of the semester, namely, preparation/participation in weekly discussions, review of journal articles, exploratory essays and a research paper. There will be no final examination in this course.
Assessment:

Coursework	100%

LEVEL: III
SEMESTER: 1
COURSE CODE: CHEM 3162
COURSE TITLE: CHEMISTRY OF METAL-CATALYZED TRANSFORMATIONS
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 2160
COURSE DESCRIPTION: The applications of metals and their compounds in industrial and chemically significant transformations; some processes of local significance such as the synthesis of ammonia and petrochemicals as well as bioinorganic processes. Process control variables in homogeneous, heterogeneous and phase transfer catalysis and a survey of the active sites of metalloenzymes in light harvesting molecules, oxygen transport, nitrogen fixation and electron transfer processes.
Assessment:

Theory Coursework	50%
Final Examination - 2-hour written paper	50%

LEVEL: III
SEMESTER: 2
COURSE CODE: CHEM 3163
COURSE TITLE: CHEMISTRY OF TECHNOLOGICALLY IMPORTANT MATERIALS
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 2160 OR CHEM 2170
COURSE DESCRIPTION: The properties, characterization and applications of various advanced technologically important materials such as Liquid Crystals for LCD applications, Semiconductors for electronic device and Solar Cell applications, lanthanide phosphors for LED applications and Nanomaterials.
Assessment:

Theory Coursework	50%
Final Examination - 2-hour written paper	50%

LEVEL: III
SEMESTER: 2
COURSE CODE: CHEM 3167
COURSE TITLE: ADVANCED INORGANIC CHEMISTRY
NUMBER OF CREDITS: 3
PREREQUISITE: CHEM 2160
COURSE DESCRIPTION: Application of Group Theory to bonding. LCAO and LGO description of bonding. Chemistry of the First Row Transition Metals including effects of Crystal Field Stabilisation Energy; physical, chemical and magnetic properties. Organometallic chemistry.
Assessment:

Theory Coursework	25%
Final Examination 2-hour written paper	75%

LEVEL: II/III
SEMESTER: 2
COURSE CODE: CHEM 3170
COURSE TITLE: FUNDAMENTALS OF INORGANIC CHEMISTRY II
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 2170
COURSE DESCRIPTION: This course is part II of the core inorganic chemistry courses and provides comprehensive fundamental basis for chemistry students and designed with the aim of introducing the salient features of the vast inorganic chemistry of main group, transition metal and inner transition metal compounds. The course is structured into three subtopics which specifically discusses exclusively the chemistry of their compounds. These topics include: chemistry of the main group elements with a focus on hydrides, oxides and halides, etc; coordination and organometallic chemistry, the basis of which is ligand field theory and molecular orbital theory and then extending into chemistry of organometallic compounds, electronic spectroscopy and magnetic properties; and finally, chemistry of the lanthanides and actinides.
The assessment approach will be varied and continuous throughout the course and include online quizzes, in-course exams, tutorial worksheets and group research paper.
Assessment:

Coursework	40 %
Final Examination - 2-hour written paper	60 %

LEVEL: III
SEMESTER: 1
COURSE CODE: CHEM 3267
COURSE TITLE: BASIC ORGANIC CHEMISTRY II
NUMBER OF CREDITS: 3
PREREQUISITE: CHEM 2260
COURSE DESCRIPTION: Reactive intermediates in Organic Chemistry - carbenes, carbocations, radicals. Chemistry of heterocyclic systems, sugars and peptides.
Assessment:

Theory Coursework	25%
Final Examination - 2-hour written paper	75%

LEVEL: III
SEMESTER: 1
COURSE CODE: CHEM 3268
COURSE TITLE: CHEMISTRY OF NATURAL PRODUCTS
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 2260 OR CHEM 2270
COURSE DESCRIPTION: Primary and secondary metabolites. The main biosynthetic pathways - evidence. The acetate-malonate pathway - polyketides. Mevalonic acid - terpenoids. Metabolites derived from shikimic acid. Amino acid - alkaloids; modern techniques for characterisation of natural products.
Assessment:

Theory Coursework	25%
Final Examination - 2-hour written paper	75%

LEVEL: III
SEMESTER: 2
COURSE CODE: CHEM 3269
COURSE TITLE: ORGANIC SYNTHESIS
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 2260 OR CHEM 2270 AND CHEM 3267
COURSE DESCRIPTION: C-C Bond forming reactions. Functional group interconversions. Selective reagents. Stereochemical control. Synthetic strategy. Retrosynthesis - bond disconnections and synthons.
Assessment:

Theory Coursework	25%
Final Examination - 2-hour written paper	75%

LEVEL: II/III
SEMESTER: 2
COURSE CODE: CHEM 3270
COURSE TITLE: ORGANIC CHEMISTRY II
NUMBER OF CREDITS: 3
PREREQUISITE: CHEM 2270
COURSE DESCRIPTION: This course follows on the Organic Chemistry I course which students would have already taken and is designed to complete the organic chemistry theoretical knowledge considered essential for a major in Chemistry. Students will apply the knowledge they have gained in stereochemistry, spectroscopy and synthetic methodology. The course introduces the student to the basic chemistry and synthesis of heterocyclic compounds, amino acids, peptides and carbohydrates and to the mechanistic features of important types of organic reactions, namely substitution and elimination. The properties and role of reactive intermediates, eg carbenes, nitrenes, radicals and carbocations, in organic chemistry are also discussed.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: CHEM 3367
COURSE TITLE: THERMODYNAMICS AND STATISTICAL THERMODYNAMICS
NUMBER OF CREDITS: 3
PREREQUISITE: CHEM 2360
COURSE DESCRIPTION: Advanced Thermodynamics: Systems of variable composition, phase equilibria, solutions, equilibria in non-ideal systems.
Statistical Thermodynamics: Microstates and configurations, Boltzmann distribution law, entropy, partition functions, ideal gas law, Sackur-Tetrode equation, applications of statistical thermodynamics.
Assessment:

Theory Coursework	20%
Final Examination - 2-hour written paper	80%

LEVEL: II/III
SEMESTER: 2
COURSE CODE: CHEM 3370
COURSE TITLE: PHYSICAL CHEMISTRY II
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 1065, CHEM 1066, CHEM 1067 and CHEM 1068 OR CHEM 1061
COURSE DESCRIPTION: This is a core course for anyone pursuing the B.Sc., a major or minor in chemistry. This rigorous and comprehensive course continues building student knowledge of concepts in modern physical chemistry. The material covers: Gases, Liquids & Solids introducing the student to adhesive forces and the characteristics of ideal and non-ideal gases; Surface Chemistry and discusses catalytic activity at surface; and Electrochemistry and oxidation-reduction reactions with insight into industrial chemical processes as related to redox reactions. The knowledge and understanding gained in this course will be important for the more advanced physical chemistry and elective courses.The final grade for CHEM 2370 will be determined from student performance in the in-course examinations, graded tutorials and the final examination.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: CHEM 3467
COURSE TITLE: BASIC ANALYTICAL CHEMISTRY
NUMBER OF CREDITS: 6
PREREQUISITE: CHEM 2460
COURSE DESCRIPTION: Troubleshooting; methods of validation of analytical methods; application of statistics in experimental designs, process optimisation and decision-making; spectroscopic methods of analysis; separation techniques; ion-selective electrodes; biochemical methods of analysis.
Assessment:

Coursework	25%
Final Examination - 3-hour paper	75%

LEVEL: III
SEMESTER: 2
COURSE CODE: CHEM 3468
COURSE TITLE: ADVANCED ANALYTICAL CHEMISTRY
NUMBER OF CREDITS: 6
PREREQUISITE: CHEM 2460
COURSE DESCRIPTION: Aspects of Laboratory management: Quality control and quality assurance; laboratory accreditation; hazardous waste management. Investigative techniques in chemistry; project planning and execution automated methods of analysis; modern spectroscopic methods of analysis; chromatographic and related techniques; radiochemical methods; polarography and related electrochemical methods; formulation science; analytical applications in forensic and clinical science, industry and the environment; the analytical chemist as an entrepreneur.
Assessment:

Coursework	25%
Final Examination - 3-hour paper	75%

LEVEL: III
SEMESTER: 1
COURSE CODE: CHEM 3560
COURSE TITLE: ENVIRONMENTAL CHEMISTRY
NUMBER OF CREDITS: 4
PREREQUISITES: AT LEAST THREE OF CHEM 2160, CHEM 2260, CHEM 2360, CHEM 2015, CHEM 2025, CHEM 2460
COURSE DESCRIPTION: Introduction to the structure of the environment; the physicochemical characteristics and processes of natural waters: equilibrium, redox, and microbiological reactions; function and processes in the atmosphere: major element cycles, ozone, climate change, acid rain, smog; characteristics of, and processes in soils; sources, effects and control of selected water, air and soil pollutants; introduction to environmental analytical chemistry.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: CHEM 3561
COURSE TITLE: INTRODUCTION TO POLYMER CHEMISTRY
NUMBER OF CREDITS: 4
PREREQUISITES: CHEM 2260, AND AT LEAST TWO (2) OF CHEM 2160, CHEM 2360, CHEM 2015 , OR CHEM 2025
COURSE DESCRIPTION: Macromolecules, molecular weights, characterisation, step polymerisation, chain reaction polymerisation, co-polymerisation; polymer morphology, testing and characterisation; flow properties and elasticity; solubility, thermodynamics; polymer technology.
Assessment:

Coursework	25%
Final Examination - 2-hour written paper	75%

LEVEL: III
SEMESTER: 2
COURSE CODE: CHEM 3562
COURSE TITLE: CORROSION SCIENCE
NUMBER OF CREDITS: 4
PREREQUISITES: CHEM 2360 OR CHEM 2370
COURSE DESCRIPTION: Basic types of corrosion; basic electrochemical processes and concepts taking place in corrosion; corrosive characteristics of commonly encountered environments; basic concepts of metals relating to corrosion; various corrosion phenomena and methods of corrosion control.
Assessment:

Coursework	25%
Final Examination - 2-hour written paper	75%

LEVEL: III
SEMESTER: 2
COURSE CODE: CHEM 3569
COURSE TITLE: INDUSTRIAL CHEMISTRY I
NUMBER OF CREDITS: 4
PREREQUISITES: AT LEAST THREE OF CHEM 2160 OR CHEM 2170, CHEM 2260 OR CHEM 2270, CHEM 2360 OR CHEM 2370, CHEM 2015
COURSE DESCRIPTION: Overview of the Chemical Industry. Petrochemicals. Selected Products of the Chemical Industry - some major chemical commodities, other industrial products. Water in Industry. Chemicals from Sugar. Industrial Safety and Pollution in the Chemical Industry. Unit Operations: An Introduction. The Patent Literature. Coursework will consist of reports on site visits and a project.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: III
SEMESTER: 1 AND 2
COURSE CODE: CHEM 3660
COURSE TITLE: RESEARCH PROJECT
NUMBER OF CREDITS: 4
PREREQUISITES: AT LEAST THREE OF CHEM 2160; CHEM 2260; CHEM 2360; CHEM 2015
COURSE DESCRIPTION: The project will be compulsory for all chemistry majors and will consist of 96 hours of practical work and the related requirements e.g. library work, lectures/seminars, meetings with supervisor(s), training on instruments etc. The student will be assigned a research problem carefully selected, bearing in mind the available time and resources, and will work under the supervision of a member of academic staff. The student will be required to do a literature review including an outline of the problem and the approach and methodology to be utilised. The student will plan and carry out experiments under supervision. On completion of the practical work, the student will be required to write up the project according to a specified format and submit the report by a given deadline for assessment. An oral presentation of ten minutes duration will also be required of the student at a public session to be held before the start of the semester final examinations.
Assessment:

Written Report	60%
Supervisor's Assessment	20%
Oral Presentation	20%

LEVEL: III
SEMESTER: 1
COURSE CODE: CHEM 3870
COURSE TITLE: PRINCIPLES OF CHEMICAL BIOLOGY
NUMBER OF CREDITS: 3
PREREQUISITES: CHEM 2260 OR CHEM 2270
COURSE DESCRIPTION: This chemistry elective provides knowledge of the three major classes of bioactive molecules (Carbohydrates, Proteins and Nucleic Acids). Quite distinct from simply examining the chemical reactions of the three molecular classes, this course focuses on their structures, functioning in signalling and recognition pathways, and their role in diseases and the aging process. For each biomolecule, its use and potential in the design of new drug therapies is addressed. The section on free radicals acts as a tie-in for the three biomolecules, in terms of relating the onset and prognosis of all diseases to a free radical origin. The two laboratory-based demonstration exercises (Carbohydrates and Nucleic Acids) will allow students to appreciate the dynamic 3-D nature of these molecules and the implications of their structure, conformation and configuration on their chemical and biological properties.
Assessment:

Coursework	40%
Final Examination - 2-hour written paper	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: CHIN 1003
COURSE TITLE: LEVEL 1A CHINESE (MANDARIN)
NUMBER OF CREDITS: 2
PREREQUISITES: NONE
COURSE DESCRIPTION: The course which involves four skills (listening, speaking, reading and writing) introduces students to Mandarin Chinese and some aspects of Chinese culture and daily life. Students will develop an ability to communicate in Chinese in basic situations relating to their personal lives via exposure to the new language and culture. The course meets for four hours per week for 13 weeks. In addition, class contact time should be supplemented by two hours of independent study for each contact hour.
Assessment:
In-course testing: 100%: 40% [mid-semester]; 40% [end of semester]; 20% [two assignments]

LEVEL: I
SEMESTER: 1
COURSE CODE: CHIN 1004
COURSE TITLE: LEVEL 1B CHINESE (MANDARIN)
NUMBER OF CREDITS: 2
PREREQUISITES: CHIN 1003/1A CHINESE OR EQUIVALENT
COURSE DESCRIPTION: This course introduces the further study of Mandarin Chinese (listening, speaking, reading, and writing) and Chinese culture begun in CHIN 1003/1A Chinese. Students will develop a minimal level of communicative competence for socializing in everyday situations. The course meets for four hours per week for 13 weeks. In addition, class contact time should be supplemented by two hours of independent study for each contact hour.
Assessment:
In-course testing: 100%: 40% [mid-semester]; 40% [end of semester]; 20% [two assignments]

LEVEL: I
SEMESTERS: 1 AND 2
COURSE CODE: COMP 1011
COURSE TITLE: INTRODUCTION TO INFORMATION TECHNOLOGY
NUMBER OF CREDITS: 3
PREREQUISITE: NONE
COURSE DESCRIPTION: This course will provide the knowledge needed to formulate a sound but basic understanding of Information Technology, its major components and its broad applications. Students will acquire hands-on experience with computers. They will become familiar with the components of a computer and learn about the various elements that make up an information system. The course deals with hardware, software, telecommunications and computer networks.
General Topics: The Technology Revolution; Inside the Computer; Information Input and Output; Storing and Retrieving Information; Software; Networks and Networking; Internet and The Web.
Practical Topics: Microsoft Package 2002 - Word, Excel, Access, PowerPoint and Front Page.
Assessment:

Practical Coursework	50%
Project Report	25%
Mid-term examination	25%

(NO FINAL WRITTEN EXAMINATION)

LEVEL: I
SEMESTER: 1 AND 2
COURSE CODE: COMP 1400
COURSE TITLE: PROGRAMMING I
NUMBER OF CREDITS: 3
PREREQUISITE: TWO UNITS OF CAPE MATHEMATICS OR ITS EQUIVALENT
COURSE DESCRIPTION: This course uses the C language as a tool to teach fundamental programming concepts. The main concepts covered are sequence selection and repetition logic, character and string manipulation, functions, arrays and their applications.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: COMP 1401
COURSE TITLE: INTRODUCTION TO COMPUTER SCIENCE CONCEPTS I
NUMBER OF CREDITS: 3
PREREQUISITE: TWO UNITS OF CAPE MATHEMATICS OR ITS EQUIVALENT
COURSE DESCRIPTION: This course presents an overview of computing technology and the field of computer science. Discussion topics will include the organization of modern computers, operating systems, algorithms, programming languages and database systems.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 1 AND 2
COURSE CODE: COMP 1402
COURSE TITLE: COMPUTER SCIENCE MATHEMATICS I
NUMBER OF CREDITS: 3
PREREQUISITE: TWO UNITS OF CAPE MATHEMATICS OR ITS EQUIVALENT
COURSE DESCRIPTION: This course provides students with the mathematical tools for problem solving. Students are taught to develop solutions for problems by mathematical Modelling using fundamental mathematical methods. Finally students are taught to implement solutions using mathematical software.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: COMP 1403
COURSE TITLE: INTRODUCTION TO WEB PROGRAMMING
NUMBER OF CREDITS: 3
PREREQUISITE: TWO UNITS OF CAPE MATHEMATICS OR ITS EQUIVALENT
COURSE DESCRIPTION: This is an introduction to web technologies and systems, including hypertext, self-descriptive text, web page design, web navigational systems, and various mark-up languages and scripting languages. Programming examples, exercises and projects are drawn from practical web-based applications. Good programming practice and program clarity is emphasized throughout the course.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 1 AND 2
COURSE CODE: COMP 1404
COURSE TITLE: PROGRAMMING II
NUMBER OF CREDITS: 3
PREREQUISITE: COMP 1400
COURSE DESCRIPTION: This course uses the C language as a tool to teach intermediate programming concepts. The main concepts covered are structures, one and two dimensional arrays and applications involving their searching, sorting and merging, random number generation, numerical methods, games and simulation.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 1 AND 2
COURSE CODE: COMP 1405
COURSE TITLE: PROGRAMMING III
NUMBER OF CREDITS: 3
PREREQUISITE: COMP 1400
COURSE DESCRIPTION: This course uses the C language as a tool to teach intermediate programming concepts. The main concepts covered are pointers, linked lists, stacks and queues and their implementations using arrays and linked lists and recursion. This course requires an understanding of basic programming concepts such as variables, assignment, selection and looping constructs as well as being comfortable with working with character, strings and arrays.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 2
COURSE CODE: COMP 1406
COURSE TITLE: COMPUTER SCIENCE MATHEMATICS II
NUMBER OF CREDITS: 3
PREREQUISITE: COMP 1402
COURSE DESCRIPTION: This course provides students with an introduction to number theory, counting, probability, matrices and limits. Students are taught to analyze and develop solutions for solving problems using the topics listed above. Finally students are taught to implement solutions using mathematical software.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 2
COURSE CODE: COMP 1407
COURSE TITLE: INTRODUCTION TO COMPUTER SCIENCE CONCEPTS II
NUMBER OF CREDITS: 3
PREREQUISITE: COMP 1401
COURSE DESCRIPTION: This course presents an overview of some key areas of computing technology and the field of computer science. Discussion topics will include Networking and the Internet, Software Engineering, Data Abstractions, Computer Graphics, Artificial Intelligence and Theory of Computation.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTER: 1 AND 2
COURSE CODE: COMP 2000
COURSE TITLE: DATA STRUCTURES
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 1200 OR (COMP 1404 AND COMP 1405)
COURSE DESCRIPTION: Stacks, queues, linked lists. Methods for solving the 'search and insert' problem. Hashing. Hash functions. Clustering. Methods of resolving collisions, e.g. linear, quadratic, chaining, double hashing. Trees. Binary trees. Search trees. Tree traversal. Analysis of binary search tree algorithm. Build binary trees. Build the best search tree from sorted data. Heaps. Priority queues. Internal and external sorting. Shell sort, quicksort, heapsort, mergesort. Polyphase merge sort. Replacement selection. Graph concepts and terminology. Representation of graphs. Depth-first and breadth-first traversals. Topological sort. Minimal cost paths. Minimal cost spanning trees. Efficiently storing and manipulating matrices with special properties, e.g. symmetric, triangular, band, sparse and others. Write programs using any or all of the above data structures/techniques.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: COMP 2100
COURSE TITLE: DISCRETE MATHEMATICS FOR COMPUTER SCIENCE
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 1140 OR COMP 1300 OR (COMP 1402 AND COMP 1406) COURSE DESCRIPTION:
Propositional logic: connectives, truth tables, tautology, contradiction, logical equivalences, predicate logic, quantifiers and valid arguments. Nature of proof: direct and indirect proofs, proof by contradiction, counterexamples, existence and constructive proofs, mathematical induction. Sets: set theoretic proofs, functions, cardinality, relations. Combinatorics: counting arguments (addition and multiplication principles), permutations and combinations, combinatorial arguments, pigeonhole principle.
Probability: probability space, independent and dependent events, random variables and expected values, the binomial theorem and Bayes theorem. Recurrence relations: homogeneous and non -homogeneous linear recurrence relations with constant coefficients. Application of the above content to relevant areas of Computer Science.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: COMP 2200
COURSE TITLE: COMPUTER ARCHITECTURE
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 1200 OR (COMP 1404 AND COMP 1405
COURSE DESCRIPTION: Computer functions; Memory caching, Internal Memory; Input/output devices and operation; Computer arithmetic; Instruction sets; Reduced instruction set computers; Control unit operation; Micro programmed control.
Assessment:

Coursework	40%
Final Examination-One 2-hour written paper	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: COMP 2300
COURSE TITLE: PROGRAMMING FOR BUSINESS APPLICATIONS
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 1200 OR (COMP 1401 AND EITHER COMP 1404 OR COMP 1405)
COURSE DESCRIPTION: Basic Concepts: Fundamentals of information systems. Overview of accounting systems. Introduction to data processing. Business Information Systems: The revenue cycle (sales order processing, billing, accounts receivable). The expenditure cycle (purchasing, accounts payable). Value added tax management. Inventory control. Human resources management/payroll/PAYE. General ledger and financial reporting system. Access DBMS and Visual Basic for Access, Develop a database application (Tables, Queries, Forms, Reports). Event driven programming. VBA programming. Working with objects. Class modules.
Multi-user applications.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: COMP 2400
COURSE TITLE: INFORMATION SYSTEMS
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 1200 OR (COMP 1401 AND EITHER COMP 1404 OR COMP 1405)
COURSE DESCRIPTION: Overview of Computer Hardware and Software. The nature of data and information. Types of Information Systems. Identifying and selecting Systems Development Projects (SDPs), corporate and information systems planning. Initiating and planning SDPs, assessing project feasibility. Performing requirements determination: interviews, questionnaires, group interviews, direction observation, joint application design, prototyping. Process modelling: Data Flow Diagrams (DFDs), symbols, rules, decomposition, balancing, completeness, consistency, timing, iterative development. Logic Modelling: Structured English, decision tables, decision trees. Conceptual data modelling, entity-relationship diagrams. Selecting the best alternative design.
Designing forms and reports. Assessing usability. Designing interfaces and dialogues, means of interaction. Finalising design specification: documents, charts, prototypes. System implementation, software testing, installation strategies, documentation, user training and support. Maintenance.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: COMP 2500
COURSE TITLE: OBJECT-ORIENTED PROGRAMMING
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 1200 OR (COMP 1404 AND COMP 1405)
COURSE DESCRIPTION: Classes and Methods: Encapsulation, Varieties of Classes, Interface and Implementation, Classes and Methods in Java, Class Variables and Class Methods. Instances, Initialization and Messages: Instance Creation and Initialization, Message-Passing Syntax. Inheritance and Composition: Subclass, Subtype, and Substitutability, Replacement and Refinement, Assignment, Equality, and Type Conversion, Polymorphism. Introduction to Object-Oriented Software Development: Analysis, Design, Programming. Object-Oriented Software Architectures: Model-View Controller, 3-Tier Architecture. Object-Oriented Design. Introduction to Developing User Interfaces using Swing. Introduction to Object-Oriented Frameworks. Introduction to the Java Collections Framework: LinkedList, ArrayList, HashSet, TreeSet, HashMap, TreeMap, Comparators, Generics, Choosing the Right Collection to Use. Object Persistence: Object-oriented database, Relational database, Object serialization.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: COMP 2600
COURSE TITLE: THEORY OF COMPUTING I
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 1140 OR COMP 1300 OR (MATH 1141 AND MATH 1152 OR COMP 1402 AND MATH 1151)
COURSE DESCRIPTION: Strings and Languages and Induction. Finite Automata and Regular Languages. Context-free Languages. Computability; Turing machine.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: COMP 2700
COURSE TITLE: DATABASE MANAGEMENT SYSTEMS I
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 1200 OR (COMP 1401 AND EITHER COMP 1404 OR COMP 1405)
COURSE DESCRIPTION: Components of a Relational database System. The Relational Data Model. Structured Query Language.
Database design; ER Modelling; Functional Dependency and Normalization.Transaction Management. Query Processing and Optimization. Database Administration.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: COMP 3000
COURSE TITLE: DESIGN AND ANALYSIS OF ALGORITHMS
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2000
COURSE DESCRIPTION: Analyse algorithms for time and space bounds. Growth of functions. Asymptotic notation. Recurrences: substitution, iteration, master method. Review and analysis of data structures: stacks, queues, linked lists hash tables, binary search trees, graph, spanning trees. Review and analysis of sorting methods: insertion sort, merge sort, heapsort, quicksort. Algorithms design techniques. Brute force. Dynamic programming, Greedy algorithms. Divide-and-conquer algorithms. Graph algorithms. String matching algorithms. Approximation algorithms. Examples of problems which can be solved using each of these techniques.Write programs which employ any or all of these techniques.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: COMP 3100
COURSE TITLE: OPERATING SYSTEMS
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2200
COURSE DESCRIPTION: Introduction to a systems programming language. Overview of Von Neumann computer architecture. Processes: Process creation/destruction, implementation, process table entries. Process Management: Context. switching, interrupt handling, inter-process communication, race conditions, mutual exclusion, critical regions, busy-waiting solutions, sleep-wakeup solutions, scheduling algorithms. Deadlocks: Pre-emption, necessary conditions, deadlock modelling, detection, avoidance, prevention. Memory Management: Multiprogramming, relocation and protection, swapping, bit-mapped management, linked-list management, partition management, virtual memory. Virtual Memory: Pages, page frames, page tables, address translation, Memory Management Unit (MMU), page faults, translation look aside buffers, and page replacement algorithms. File Systems: Contiguous allocation, linked-list allocation, index nodes, implementing directories. Disk Performance Optimization: Seek optimization strategies. Input/Output: Device controllers, I/O ports, memory-mapped I/O, direct memory access, interrupt handlers, device drivers. Resource Protection: Protection domains, access matrices, access lists, capabilities lists, lock-key mechanisms.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: COMP 3150
COURSE TITLE: COMPUTER NETWORKS
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2500
COURSE DESCRIPTION: Computer Networks and the Internet. The Internet. Network edge and core. Network access and physical media. Protocol layers and their Service models. This chapter provides a good introduction to networking.
The Application Layer. Principles of application layer protocols FTP, Email, SMTP, DNS etc. Socket programming with TCP and UDP.
The Transport Layer. Transport-layer services. Multiplexing and demultiplexing. UDP and TCP. Reliability. Congestion control.
The Network layer and Routing Service models. Routing. IP. Mobility. Link Layer and Local Area Networks Services. Error detection and correction. Multiple access protocols. Ethernet. Network hardware. Wireless links. PPP. Frame Relay.
Introduction to Network Design. The network design and implementation process. Stages: Feasibility Study, preparing network design plan, understanding current network, defining new network requirements, identifying geographic scope, calculating circuit requirements, identifying security and control measures, designing network configurations, determining network costs, network Implementation. Common WAN, LAN and backbone designs. Examples.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: COMP 3220
COURSE TITLE: HUMAN-COMPUTER INTERACTION
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 1200
COURSE DESCRIPTION: Human-computer interaction (HCI) is concerned with the joint performance of tasks by humans and machines. Task-centered system design. User-centered design and prototyping. Methods for evaluation of interfaces with users.
Characteristics of good representations, information visualization. Graphical screen design. Design principles and usability heuristics.
HCI design standards.
Assessment:

Coursework	60%
Final Examination - One 2-hour written paper	40%

LEVEL: III
SEMESTER: 2
COURSE CODE: COMP 3250
COURSE TITLE: SOFTWARE ENGINEERING
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2000
COURSE DESCRIPTION: Fundamentals of Software Engineering, Software Processes. Project Management. Requirements Engineering, Software Modeling and Software Prototyping. Software Cost Estimation and Quality Management. Data Flow Oriented Design, Object-Oriented Design, Design Patterns, and User Interfaces. Validation and Verification.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: COMP 3275
COURSE TITLE: WIRELESS & MOBILE COMPUTING
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 3150
COURSE DESCRIPTION: Introduction to the ISO and other network architectures. History and Evolution of wireless standards, Special problems of wireless and mobile computing; Wireless Local loops; Mobile Internet Protocol, Mobile aware adaptation, Mobile client/server networks; Mobile data access; Software support for mobile and wireless computing (includes MIDP programming, SMS and Bluetooth based applications); Wireless Local loops; Mobile Internet Protocol; Application aware and application transparent adaptation; Mobile data address; The role of middleware; Performance Issues; Emerging Technologies.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: COMP 3300
COURSE TITLE: PROGRAMMING LANGUAGES I
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2000
COURSE DESCRIPTION: This course will focus on two programming paradigms: imperative and logic. For the imperative paradigm, the programming language C (or any other language representative of this paradigm) will be used. For the logic programming paradigm, the programming language Prolog (or any other language representative of this paradigm) will be used.
The Imperative Programming Paradigm: Basic types. Expressions and statements. Functions/procedures and programme structure.
Arrays, pointers. Structures/records. Structures input/output. File input/output.
The Logic Programming Paradigm. Motivation and introduction. Knowledge bases, unification and variable instantiation, backtracking, relations, conjoined goals, disjoint goals, negative goals, equality testing. Structures and operators, Input/output. Problem-solving strategies.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: COMP 3400
COURSE TITLE: ARTIFICIAL INTELLIGENCE
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2000
COURSE DESCRIPTION: The concept of problem solving as search through a state space. Basic search algorithms. Depth-first, breadth-first, best-first, hill-climbing, branch-and-bound, A*. Mini-max algorithm with alpha-beta pruning. Logic and theorem proving. Propositional logic. First order predicate logic. Unification. Clausal form. Resolution theorem proving. Natural language processing. Parsing expressions. Semantic transition trees. Planning. Basic goal regression using STRIPS type actions. Production rule systems. Basic concepts. An expert system shell.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: COMP 3500
COURSE TITLE: INTERNET TECHNOLOGIES I
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2500
COURSE DESCRIPTION: Overview of networking. The TCP/IP stack. Domain name resolution. The Hypertext. Transfer Protocol (HTTP): headers, requests, responses, content-negotiation, caching. The Extensible. Hypertext. Mark up Language (XHTML): XML syntax, XHTML DTDs, document structure, text formatting elements, images, tables, forms, links, image maps. Cascading Style Sheets (CSS): separation of content and presentation, selectors, declarations, conflict resolution. Client-side scripting: Control of document appearance and content, browser control, user interaction, window manipulation, client-side object hierarchy, cookies, animation. Applets: Class hierarchy, graphical user interface elements, event handling, component layouts, drawing graphics, applications. Extensible Mark up Language (XML): Advantages and applications, Document Type Definitions (DTDs).
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: 1
COURSE CODE: COMP 3550
COURSE TITLE: INTERNET TECHNOLOGIES II
NUMBER OF CREDITS: 4
PREREQUISITE: COMP2500 OR COMP 3500
COURSE DESCRIPTION: HTTP; Server-side scripting. Java structures for the Internet. Servlets; Java Server Pages XML, DTD and Schemas, Namespaces. XSLT, XPath Structure and Applications Server-side database connectivity. Security Architecture
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: COMP 3600
COURSE TITLE: THEORY OF COMPUTING II
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2100
COURSE DESCRIPTION: Turing machines. Computing with Turing machines. Extensions of Turing machines. Nondeterministic Turing machines. Grammars. Undecidability. The Church-Turing Thesis. The halting problem. Unsolvable problems. Recursively enumerable languages. Chomsky hierarchy. Computational complexity: Classes P and NP. NP–completeness. Special topics, e.g. Methods of tackling NP-hard problems.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: 2
COURSE CODE: COMP 3700
COURSE TITLE: DATABASE MANAGEMENT SYSTEMS II
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2700
COURSE DESCRIPTION: Transaction management and concurrency control. Database recovery management. Performance query optimization. Database administration. Distributed database. Internet technologies and Databases. Databases and XML. Object-Oriented databases. Database Modelling with UML. Data warehousing
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: COMP 3750
COURSE TITLE: NUMERICAL COMPUTING
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2100
COURSE DESCRIPTION: Introduction to MATLAB. Review of Calculus, Binary Numbers, Error Analysis. Solution of Non-linear Equations. Solution of Linear Systems.Interpolation and Polynomial Approximation. Numerical Differentiation and Integration.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: COMP 3800
COURSE TITLE: CRYPTOGRAPHY AND SECURITY
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2100
COURSE DESCRIPTION: Classical Cryptography. Shift cipher. Substitution cipher. Permutation cipher. Other ciphers. Cryptanalysis applicable to these encodings. Shannon's Theory. Entropy. Huffman encodings. Keys. Cryptosystems. Data Encryption Standard. Block ciphers and the Advanced Encryption Standard. Cryptographic hash functions. Internet Security.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: 1
COURSE CODE: COMP 3850
COURSE TITLE: INTELLIGENT SYSTEMS
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2000
COURSE DESCRIPTION: Characteristics of intelligent systems. Rule-based Expert Systems; production rules. Reasoning with uncertainty. Fuzzy logic. Frame-based expert systems. Artificial Neural Networks. Genetic algorithms. Knowledge Engineering and Data Mining.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: 1
COURSE CODE: COMP 3900
COURSE TITLE: SPECIAL TOPICS IN COMPUTER SCIENCE (GAME PROGRAMMING)
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 2000 AND COMP 2500
COURSE DESCRIPTION: Graphics. Computer Assisted Design (CAD). Computer Assisted Education (CAE). Speech synthesis. Advanced processor architecture.Expert systems. Computability and complexity. Proof of correctness of programs. Image Processing. Any other approved topics.The particular topic taught may change from year to year.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: 2
COURSE CODE: COMP 3950
COURSE TITLE: MODELLING AND SIMULATION
NUMBER OF CREDITS: 4
PREREQUISITE: COMP 2100
COURSE DESCRIPTION: Discrete and Continuous Systems. Discrete-Event System Simulation; Dynamic Allocation and Linked Lists. Queuing Models; Steady-State Behavior of Infinite-Population Markovian Models. Single-Server Queues with Poisson Arrivals and Unlimited Capacity. Analysis of Simulation Data; Goodness-of-Fit Tests, Chi-Square Test. Non-stationary Poisson Process. Output Analysis for Terminating Simulations. Error Estimation for Steady-State Simulation.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: COMP 3990
COURSE TITLE: PROJECT
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 2500 AND COMP 3250
COURSE DESCRIPTION: Assessing project feasibility; Methods of investigation; Project reporting and presentation; Project management. Select and implement an appropriate project on some topic in Computer Science. This may include design and implementation of a computer application.
Assessment:
Project report 80%
Oral presentation 20%
(No final written examination)

LEVEL: I
SEMESTER: 1
COURSE CODE: ECON 1001
COURSE TITLE: INTRODUCTION TO ECONOMICS I
NUMBER OF CREDITS: 3
PREREQUISITES: NONE
DEPARTMENT RESPONSIBLE: ECONOMICS
COURSE DESCRIPTION: This course provides students to the history of economic thought highlighting some of the key economic issues, which have preoccupied the discipline from its origins. The course also provides an introduction to the basic principles of micro-economic analysis together with the main perspectives on the functioning of the macro-economy. The micro-economic analysis is illustrated by reference to a key export sector in the Caribbean (e.g. oil or bananas). The implications of trends in the latter for the Balance of Payments and macro economy conclude this first semester course.

LEVEL: I
SEMESTER: 2
COURSE CODE: ECON 1002
COURSE TITLE: INTRODUCTION TO ECONOMICS II
NUMBER OF CREDITS: 3
PREREQUISITES: NONE
CO-REQUISITE: ECON 1001
DEPARTMENT RESPONSIBLE: ECONOMICS
COURSE DESCRIPTION: This course emphasises macro-economic theory and policy and the related national income accounting together with international trade and the balance of payments. There is a significant stress on the implications of these economic issues for the Caribbean reality.

LEVEL: I
SEMESTER:
COURSE CODE: ECON 1005
COURSE TITLE: INTRODUCTION TO STATISTICS
NUMBER OF CREDITS: 3
PREREQUISITES:
DEPARTMENT RESPONSIBLE: ECONOMICS
COURSE DESCRIPTION: Descriptive Statistics; Probability and Probability distributions, Sampling distributions, Estimation, Hypothesis testing, simple correlation and regression.

LEVEL: I
SEMESTER: 1
COURSE CODE: ESST 1000
COURSE TITLE: PHYSICS FOR ENVIRONMENTAL SCIENCES
NO. OF CREDITS: 3
PREREQUISITES: 2 CAPE Science subjects (Units I &II) or 'A' Level equivalent, with an average Grade of III or B. Must have passes in Biology, Chemistry, Mathematics and Physics at CSEC level OR An approved Associate Degree with a minimum GPA of 2.5
COURSE DESCRIPTION: Physics for Environmental Sciences offers an introduction into the physics of the Earth's climate system and the physical methods which are developed and applied to investigate quantitatively different environmental systems. The principal topics covered are the physics of the built environment, the physics of human survival, energy for living, environmental health, revealing the planet, the sun and the atmosphere, the biosphere, the global climate, and climate change. It provides an essentially non-mathematical treatment suitable for a first year undergraduate level course. Course delivery would involve a combination of lectures, practicals, tutorials, and web based materials. Assessments are designed to encourage students to work continuously with the course materials
Assessment

Coursework	50%
Final Examination	50%

LEVEL: I
SEMESTER: 1
COURSE CODE: ESST 1001
COURSE TITLE: BIOLOGY FOR ENVIRONMENTAL SCIENCES
NO. OF CREDITS: 3
PREREQUISITES: 2 CAPE Science subjects (Units I &II) or 'A' Level equivalent, with an average Grade of III or B. Must have passes in Biology, Chemistry, Mathematics and Physics at CSEC level OR An approved Associate Degree with a minimum GPA of 2.5
COURSE DESCRIPTION: This course introduces the biological principles underlying the study of environmental science, and provides an introduction to the diversity of microbes, plants and animals. It also examines the importance and diversity of the biological component of the environment. It will also cover basic principles of biochemistry and genetics, and is a necessary foundation course for several Level II-III courses in the Environmental Sciences programme. Delivery of course materials would involve a combination of lectures, practicals, tutorials, and web bases materials. Assessments are designed to encourage students to work continuously with the course materials
Assessment:

Coursework	50%
Final Examination	50%

LEVEL: I
SEMESTER: 1
COURSE CODE: ESST 1002
COURSE TITLE: CHEMISTRY FOR ENVIRONMENTAL SCIENCES
NO. OF CREDITS: 3
PREREQUISITES: **2 CAPE Science subjects (Units I &II) or 'A' Level equivalent, with an average Grade of III or B. Must have passes in Biology, Chemistry, Mathematics and Physics at CSEC level OR An approved Associate Degree with a minimum GPA of 2.5**
COURSE DESCRIPTION: Introduction to Environmental Chemistry offers an introduction to the field of environmental chemistry. It is designed to provide fundamental understanding in the underlying concepts of Chemistry along with the more specific areas relevant to environmental concepts. Students will be introduced to the fundamentals of general, physical and organic chemistry within the context of their application to environmental issues. To achieve this, qualitative and quantitative aspects of environmental processes will be studied. Specific topics include processes in the atmosphere, natural waters, and soils, along with the transport and fate of chemicals in the environment. Wherever possible, examples involving local/regional issues and current events will be used to illustrate the concepts in the course. The delivery of course materials would involve a combination of lectures, practicals, tutorials, and web based materials. Assessments are designed to encourage students to work continuously with the course materials
Assessment

Coursework	50%
Final Examination	50%

LEVEL: I
SEMESTER: 2
COURSE CODE: ESST 1004
COURSE TITLE: SCIENCE COMMUNICATION
NO. OF CREDITS: 3
PREREQUISITE(S): 2 CAPE Science subjects (Units I &II) or 'A' Level equivalent, with an average Grade of III or B. Must have passes in Biology, Chemistry, Mathematics and Physics at CSEC level OR An approved Associate Degree with a minimum GPA of 2.5COURSE DESCRIPTION: The ability to communicate information and ideas to others is fundamental to every branch of science. Communications skills are reported by employers to be the qualities they most desire in potential job applicants. Scientists are often required to report their findings to a range of audiences using various delivery methods. Unfortunately, communication skills do not come naturally, nor can they be learned by simply reading about the subject. They require development, with the opportunity for practice and feedback, before students can feel truly comfortable expressing themselves orally and in writing, in logical, clear and concise terms. The aim of this course is to provide students entering the Environmental Science and Sustainable technology with instruction on developing effective scientific communication skills relevant to areas of research and employment. Some of the main skills would include reporting writing, literature reviews, oral presentation and team-work. The course content would be delivered in 5 modules using a combination of lectures, practicals, tutorials, and web based materials. Assessments are designed to encourage students to work continuously with the course materials.
Assessment

Coursework	100%

LEVEL: I
SEMESTER: 2
COURSE CODE: ESST 1005
COURSE TITLE: INFORMATION TECHNOLOGY FUNDAMENTALS
NO. OF CREDITS: 3
PREREQUISITES: 2 CAPE Science subjects (Units I &II) or 'A' Level equivalent, with an average Grade of III or B. Must have passes in Biology, Chemistry, Mathematics and Physics at CSEC level OR An approved Associate Degree with a minimum GPA of 2.5
COURSE DESCRIPTION: This course provides an introduction of the discipline of IT. It describes how it relates to environmental science and sustainable technology. The goal is to help students understand the diverse contexts in which IT is used and the challenges inherent in the diffusion of innovative technology. The delivery of course materials would involve a combination of lectures, practicals, tutorials, and web based materials. Assessments are designed to encourage students to work continuously with the course materials.
Assessment

Coursework	50%
Final Examination	50%

LEVEL: 1
SEMESTER: 2
COURSE CODE: ESST 1006
COURSE TITLE: HUMAN IMPACTS ON THE ENVIRONMENT
NO. OF CREDITS: 3
PREREQUISITES: 2 CAPE Science subjects (Units I &II) or 'A' Level equivalent, with an average Grade of III or B. Must have passes in Biology, Chemistry, Mathematics and Physics at CSEC level, OR; An approved Associate Degree with a minimum GPA of 2.5
COURSE DESCRIPTION: This course gives an overview of human-environment interactions exploring causes, effects and solutions of human impacts using a broad temporal and spatial perspective. We consider the evolutionary and historical changes in human-environment interactions and the main drivers of change: population growth, technological and lifestyle changes. Regional variation in these drivers along with issues of economy, urbanisation and inequality will also be considered. The bulk of the course illustrates the complex and dynamic ecological interactions between humans and specific resources and components of the environment necessary for human wellbeing namely ecosystems and biodiversity, food, freshwater, clean air, materials and energy. The consequences of these interactions such as resource depletion, environmental degradation and global climate change will be highlighted. Future scenarios and management solutions will be explored. The delivery of course materials would involve a combination of lectures, practicals, tutorials, and web based materials. Assessments are designed to encourage students to work continuously with the course materials.
Assessment

Coursework	50%
Final Examination	50%

LEVEL: I
SEMESTERS: 1 & 2
COURSE CODE: FOUN 1101
COURSE TITLE: CARIBBEAN CIVILISATION
NUMBER OF CREDITS: 3PREREQUISITES:
FACULTY RESPONSIBLE: FACULTY OF HUMANITIES & EDUCATION
COURSE DESCRIPTION: (NOT for Humanities students)
Objectives:

1. To develop an awareness of the main process of cultural development in Caribbean societies, highlighting the factors, the problematics and the creative output that have fed the emergence of Caribbean identities.
2. To develop a perception of the Caribbean as wider than island nations or linguistic blocs.
3. To stimulate studentsí interest in, and commitment to Caribbean civilisation and to further their self-definition.

Modules:

1. Origins
   I Caribbean space / physical environment / Amerindian peoples and Cultures: their legacy.
   II European conquest, settlement and demographic changes.
2. Fighting for Freedom
   I Slavery, marronage and rebellion.
   II New in/out- migration, indenture, and their consequences: 19th and 20th centuries.
3. Quest for Identity
   I Race and nationalism.
   II Independence, dependence and regionalism.
   III Creolisation and ethnic identity.
4. Ideas, Ideologies and Theologies
   I Education/religion in the Caribbean.
   II Caribbean Intellectual Traditions.
5. Caribbean Expressions
   I Caribbean music - Calypso, Reggae.
   II Caribbean festivals.
   III Sports.
   IV Caribbean voices - French, English, Spanish, Linguistic Identity.

Evaluation:

In-course test	40%
Final 2-hour examination	60%

LEVEL: I
SEMESTER: 2
COURSE CODE: FOUN 1102
COURSE TITLE: ACADEMIC WRITING FOR DIFFERENT DISCIPLINES (OPTION C)
NUMBER OF CREDITS: 3
PREREQUISITES:
Any one of the following:

- CSEC English Language Grade I (General Proficiency) Grade I or II in CAPE Communication Studies
- General Paper Grade A or B
- A Pass in the English Language Proficiency Test
- A Pass in English as a Foreign Language (Intermediate)

FACULTY RESPONSIBLE: FACULTY OF HUMANITIES & EDUCATION
COURSE DESCRIPTION: The aim of this course is to develop students writing skills in areas related to their academic disciplines. There will be twenty-four (24) contact hours. Classroom activity will be supplemented by printed materials.
Option C
Scientific and Technical Writing (Compulsory for FST Students)
Technical Description
Expository Writing for Scientific and Technical Purposes

Evaluation:

Coursework	50%
Final Examination	50%

Students must pass both coursework and final examination in order to qualify for an overall pass in the course.
Attendance Regulation:
A student in any of the Foundation courses in English Language who misses two (2) out of any six (6) class hours will be warned, and after two warnings any further absence without prior permission or an acceptable medical certificate will result in automatic exclusion from the examination.

NB: FST students should **not** register for FOUN 1001 – English for Academic Purposes

FOUN 1210 Not offered to FST Students.

LEVEL: I
SEMESTERS: 1 & 2
COURSE CODE: FOUN 1301
COURSE TITLE: LAW, GOVERNANCE, ECONOMY AND SOCIETY (UNIVERSITY FOUNDATION COURSE) (FACULTY OF SOCIAL SCIENCES)
NUMBER OF CREDITS: 3
PREREQUISITES:
FACULTY RESPONSIBLE: FACULTY OF SOCIAL SCIENCES
COURSE DESCRIPTION: This course is delivered through the medium of print. The print package comprises a student manual, a study guide and a reader. In addition to the print material there are teleconferencing and/or tutorials.
The course introduces students to some of the major institutions in Caribbean society. It exposes the student to both the historical and contemporary aspects of Caribbean society, including Caribbean legal, political and economic systems. In addition, Caribbean culture and Caribbean social problems are discussed.
Assessment is based solely on a final examination at the end of the semester. It consists of twelve (12) essay-type questions, of which students are required to write on three (3). All questions carry equal marks. The examination is divided into four (4) sections corresponding to the four (4) subject areas in the course. Students are not allowed to do more than one question in any one section.

LEVEL: I
SEMESTERS: 1 & 2
COURSE CODE: FREN 1001
COURSE TITLE: LEVEL 1A FRENCH
NUMBER OF CREDITS: 2
PREREQUISITES: NONE
COURSE DESCRIPTION: This is a beginners' course for students with no previous knowledge of French. It develops the communicative, linguistic, and intercultural competence of learners by focusing on their speaking, listening, reading and writing skills. The course meets for four hours per week for 13 weeks. In addition, class contact time should be supplemented by one hour of independent study for each contact hour.
Assessment:
In-course testing: 100%: 40% [mid-semester]; 40% [end of semester]; 20% [two assignments]

LEVEL: I
SEMESTERS: 1 & 2
COURSE CODE: FREN 1002
COURSE TITLE: LEVEL 1B FRENCH
NUMBER OF CREDITS: 2
PREREQUISITES: FREN 1001/1A FRENCH OR EQUIVALENT
COURSE DESCRIPTION: This couse is the next level after FREN 1001/1A French with the aim to further develop the communicative, linguistic, and inter cultural competence of learners. Emphasis is placed on the development of learners' speaking, listening, reading, and writing skills. The course meets for four hours per week for 13 weeks. In addition, class contact time should be supplemented by one hour of independent study for each contact hour..
Assessment:
In-course testing: 100%: 40% [mid-semester]; 40% [end of semester]; 20% [two assignments]

LEVEL: I
SEMESTER: 1
COURSE CODE: INFO 1500
COURSE TITLE: INTRODUCTION TO INFORMATION TECHNOLOGY FUNDAMENTALS
NUMBER OF CREDITS: 3
PREREQUISITE: NONE
COURSE DESCRIPTION: This course provides an overview of the discipline of IT. It describes how it relates to other computing disciplines. The goal is to help students understand the diverse contexts in which IT is used and the challenges inherent in the diffusion of innovative technology.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: INFO 1501
COURSE TITLE: INTRODUCTION TO WWW PROGRAMMING
NUMBER OF CREDITS: 3
PREREQUISITE: NONE
COURSE DESCRIPTION:
This is an introduction to web technologies and systems, including hypertext, self-descriptive text, web page design, web navigational systems, and various mark-up languages and scripting languages. Programming examples, exercises and projects are drawn from practical web-based applications. Good programming practice and program clarity is emphasized throughout the course.
Assessment:

Attendance and Participation	10%
5 Lab Examinations	10% each
Project	40%

(NO FINAL WRITTEN EXAMINATION)

LEVEL: I
SEMESTER: 1
COURSE CODE: INFO 1502
COURSE TITLE: INTRODUCTION TO PROBLEM SOLVING
NUMBER OF CREDITS: 3
PREREQUISITE: NONE
COURSE DESCRIPTION: This course provides mostly a non-language specific introduction to problem-solving and computer programming. Topics include: structured problem-solving, structured program design, control (logic) structures, working with arrays and data files, and an overview of data management and object-oriented programming. Students will be exposed to a variety of tools and methods that are useful in all aspects of developing software applications and writing program code. There is a small hands-on java (or other language of choice) component of the course with the bulk of the course focusing instead on designing program logic.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 1 COURSE CODE: INFO 1503
COURSE TITLE: INTRODUCTION TO MATHEMATICS FOR CRITICAL THINKING
NUMBER OF CREDITS: 3
PREREQUISITE: NONE
COURSE DESCRIPTION: This course provides students with the mathematical tools for problem solving. Students are taught to develop solutions for problems by mathematical Modelling using fundamental mathematical methods.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 2 COURSE CODE: INFO 1504
COURSE TITLE: INTRODUCTION TO PROGRAMMING FUNDAMENTALS I
NUMBER OF CREDITS: 3
PREREQUISITE: NONE
COURSE DESCRIPTION: Programming fundamentals develops skills and concepts that are essential to good programming practice and problem solving. The course introduces students to the basics of programming, including programming constructs, basic data structures, and arrays. Throughout the course these concepts are applied to the solution of simple business type problems.
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Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 2
COURSE CODE: INFO 1505
COURSE TITLE: INTRODUCTION TO COMPUTER SYSTEMS
NUMBER OF CREDITS: 3
PREREQUISITE: NONE
COURSE DESCRIPTION: The course introduces the student to the basics of hardware, storage and system software. It covers the relationship between different parts of a computer system and how they work together to get a job completed. Additionally it gives the student an appreciation for data organization techniques and their applicability to real world scenarios.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 2
COURSE CODE: INFO 1506
COURSE TITLE: INTRODUCTION TO INFORMATION AND DATA MANAGEMENT
NUMBER OF CREDITS: 3
PREREQUISITE: NONE
COURSE DESCRIPTION: Data Management is the process of organizing data from the resource perspective. It introduces students to spreadsheets and databases. This course looks at databases from a user perspective rather than a design perspective to give an appreciation for its place in the Information Technology area. The spreadsheets will be presented with the purpose of students being able to create models required by the working environment
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 2
COURSE CODE: INFO 1507
COURSE TITLE: INTRODUCTION TO BUSINESS PRINCIPLES
NUMBER OF CREDITS: 3
PREREQUISITE: NONE
COURSE DESCRIPTION: This course gives an introduction to economics, managerial accounting and project management. Additionally, it gives the student a grasp of the role each of these areas perform and an appreciation as to why they are critical to any organization.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTER: 2 AND EVENING UNIVESITY – SEMESTER 2
COURSE CODE: INFO 2400
COURSE TITLE: INFORMATION SYSTEMS DEVELOPMENT
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 1400 OR INFO 1500
COURSE DESCRIPTION: Systems development. Throughout the course, information is seen as a valuable corporate resource, one that can be used to maximize profit and improve competitiveness of a business organization. Consequently, the course takes an in-depth look at business processes and the ways in which they can be automated through an Information System. There is extensive coverage of the technical foundations of modern Information Systems as well as the process of developing and implementing a suitable Information System for an organization. The development of web-based information systems is also covered.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: II
SEMESTER: 2 AND
EVENING UNIVERSITY - SEMESTERS 2 AND 3
COURSE CODE: INFO 2405
COURSE TITLE: DISCRETE MATHEMATICS
NUMBER OF CREDITS: 4
PREREQUISITES: INFO 1415 OR INFO 1503
COURSE DESCRIPTION: This course seeks to build formal mathematical competence required in many fields in Information Technology such as information security, cryptography and data structures. Students are exposed to formal logic and reasoning and use this to construct proofs and develop algorithms. The course also introduces various problem solving strategies especially thinking algorithmically both iterative and recursive. The course also motivates the need for discrete structures and techniques by introducing computer applications.

Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: II
SEMESTER: 2 AND EVENING UNIVERSITY - SEMESTER 2
COURSE CODE: INFO 2410
COURSE TITLE: FUNDAMENTAL DATA STRUCTURES
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 2420
COURSE DESCRIPTION: This course covers the major data structures used in programming. The properties of the various data structures are studied as well as their appropriate use for different applications. In-memory data structures as well as structures for file organizations are considered.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: II
SEMESTER: 1 AND
EVENING UNIVERSITY - SEMESTERS 1 AND 3
COURSE CODE: INFO 2415
COURSE TITLE: ENTERPRISE DATABASE SYSTEMS
NUMBER OF CREDITS: 4
PREREQUISITES: INFO 1400 AND INFO 1405 OR INFO 1506
COURSE DESCRIPTION: The course covers the design, implementation and management of Database Systems. Emphasis is placed on database design of real world business applications using Entity-Relationship modeling. SQL programming is covered in detail. Query Optimization concepts are introduced in the context of database performance tuning. Data Management concepts such as Transaction Management, Concurrency Control, Recovery, and Security are discussed. Several current database environments and applications including Distributed Databases and Web-enabled Databases are discussed.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: II
SEMESTER: 1 AND
EVENING UNIVERSITY - SEMESTERS 1 AND 3
COURSE CODE: INFO 2420
COURSE TITLE: PROGRAMMING FUNDAMENTALS II
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 1420 OR INFO 1504
COURSE DESCRIPTION: The course introduces simple data structures that every novice programmer should become familiar with. It introduces the concept of Abstract Data Types, their characteristics and implementation, such as Linked list, stacks and queues.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: II
SEMESTER: 1 AND
EVENING UNIVERSITY - SEMESTERS 1 AND 3
COURSE CODE: INFO 2425
COURSE TITLE: COMPUTER ARCHITECTURE
NUMBER OF CREDITS: 4
PREREQUISITES: INFO 1415 AND INFO 1420 OR INFO 1503 AND INFO 1504
COURSE DESCRIPTION: This course covers the fundamentals of the operation and design of computers from the programmer's and architect's point of view. It describes the components of a computer, functions of each component, and how components interact with each other and with software.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: II
SEMESTER: 1 AND EVENING UNIVERSITY- SEMESTER: 3
COURSE CODE: INFO 2430
COURSE TITLE: BUSINESS INFORMATION SYSTEMS
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 1400 AND INFO 1405 OR INFO 1506 AND INFO 1507
COURSE DESCRIPTION: The course focuses on Information Systems in terms of business processes. It covers transaction cycles, events, and activities of Revenue, Expenditure, Production, and Human Resources business processes. The course covers core application frameworks – customer relationship management, enterprise resource planning, revenue and expenditure management, and human resource management – with emphasis on modeling of business processes and data. The material is covered from the perspective of business in Trinidad & Tobago. E-Business concepts and principles are introduced.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: II
SEMESTER: 1 AND EVENING UNIVERSITY – SEMESTER: 1
COURSE CODE: INFO 2500
COURSE TITLE: NETWORKING TECHNOLOGIES FUNDAMENTALS
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 1500 AND INFO 1505
COURSE DESCRIPTION: The course introduces the student to the world of computer networks. Principles and protocols for data communication are covered. Network architecture models are visited and students get exposure to the practical aspects of networking e.g. setting up a basic network, router configuration, crimping of cables.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: 1 AND EVENING UNIVERSITY-SEMESTER 1
COURSE CODE: INFO 3400
COURSE TITLE: FUNDAMENTALS OF OPERATING SYSTEMS
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 2425
COURSE DESCRIPTION: This course provides the student with an introductory understanding of the role and functioning of an operating system. The basic algorithms used to manage processes, memory and disk devices will be presented.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: 2 AND
EVENING UNIVERSITY - SEMESTERS: 2 AND 3
COURSE CODE: INFO 3410
COURSE TITLE: WEB SYSTEMS AND TECHNOLOGIES
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 2420
COURSE DESCRIPTION: This course covers the design, implementation and testing of web-based applications and social software, and the incorporation of a variety of digital media into these applications. Students are exposed to a range of web technologies, both client-side and server-side.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: I AND EVENING UNIVERSITY-SEMESTER 1
COURSE CODE: INFO 3415
COURSE TITLE: INFORMATION ASSURANCE AND SECURITY
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 2400 OR COMP 2200
COURSE DESCRIPTION: This course provides the knowledge to understand, apply and manage information assurance and security in computing, communication, and organizational systems. It covers operational issues, policies and procedures, attacks and defense mechanisms, risk analyses, recovery, and information security.
Assessment:
Coursework (test/assignments) 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: 2
COURSE CODE: INFO 3420
COURSE TITLE: PROGRAMMING LANGUAGES
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 2420 OR COMP 2500
COURSE DESCRIPTION: The aim of this course is to provide a conceptual framework that will enable students to understand already-learned programming languages more deeply and to learn new languages effectively as they will require skills in adopting new programming languages. Students will gain an understanding of the fundamental concepts and design issues of programming languages and become familiar with the majaor programming paradigms.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: EVENING UNIVERSITY - SEMESTER 3
COURSE CODE: INFO 3425
COURSE TITLE: PROFESSIONAL ETHICS AND LAW
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 2400
COURSE DESCRIPTION: This course provides an overview of current ethical standards and practices in the computing and information technology area. Students will develop an awareness of both the ethical and legal issues facing the computerized workplace. The course also introduces the student to policy development in computer technology related environments.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: INFO 3430
COURSE TITLE: INTRODUCTION TO SCIENTIFIC COMPUTING
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 2405 AND INFO 2420
COURSE DESCRIPTION: This course provides a broad overview of numerical methods for students in computationally oriented disciplines who need to solve mathematical problems that arise in many fields, especially science and engineering. It focuses on the motivation and ideas behind the numerical algorithms and on the use of professionally written mathematical software for obtaining solutions whenever possible.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 2 AND EVENING UNIVERSITY - SEMESTER 2
COURSE CODE: INFO 3435
COURSE TITLE: E-COMMERCE
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 2400
COURSE DESCRIPTION: This course provides broad coverage of e-commerce systems. It covers the various e-commerce business models and e-commerce payment systems.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 1 AND EVENING UNIVERSITY - SEMESTER 3
COURSE CODE: INFO 3440
COURSE TITLE: SOFTWARE ENGINEERING
NUMBER OF CREDITS: 4
PREREQUISITES: INFO 2400 AND INFO 2420
COURSE DESCRIPTION: This course introduces students to the fundamental concepts and techniques of software engineering. It examines various approaches for developing a software product, from the initial request for development right down to the delivery of the final product to the customer. All of these approaches involve steps such as determining the user requirements, structuring these requirements in the form of a requirements specification document, and designing, coding and testing the software. These aspects of software engineering form the major component of the course. Since project management skills are crucial for the successful development of a software product, the course also covers project management techniques as they pertain to software engineering. This includes the topics of project scheduling, software estimation, and risk management
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 2 AND
EVENING UNIVERSITY – SEMESTER 2
COURSE CODE: INFO 3490
COURSE TITLE: PROJECT
NUMBER OF CREDITS: 4
PREREQUISITES: INFO 2400 AND INFO 2420
COURSE DESCRIPTION: This course requires the student to implement an IT project of an appropriate scope. The student will liaise with an academic supervisor. Several lectures will be given on project management and research methodologies.
Assessment:

Coursework	80%
Presentation	20%

(NO FINAL WRITTEN EXAMINATION)

LEVEL: III
SEMESTER: NOT OFFERED --2013/2014
COURSE CODE: INFO 3500
COURSE TITLE: USER INTERFACE DESIGN AND DEVELOPMENT
NUMBER OF CREDITS: 4
PREREQUISITES: INFO 2400
COURSE DESCRIPTION: Human-computer Interaction is an interdisciplinary field that integrates theories and methodologies from Computer Science, cognitive psychology, design, and many other areas. The course is intended to introduce the student to the basic concepts of Human-computer Interaction. It will cover the basic theory and methods that exist in the field. The course will unfold by examining design and evaluation. Case studies are used throughout the readings to exemplify the methods presented and to lend a context to the issues discussed. The students will gain principles and skills for designing and evaluating interactive systems.

Among the topics studied are the design and evaluation of effective user interaction designs, including principles and guidelines for designing interactive systems. Additionally, much emphasis is given to the development process for user interaction designs as an integral, but different, part of interactive software development. User interaction development activities include requirements and task analysis, usability specifications, design, prototyping, and evaluation. It is a goal of this course to help students realize that user interface development is an ongoing process throughout the full product life cycle, and developing the human-computer interface is not something to be done at the last minute, when the "rest of the system" is finished. During the course the students will be involved with a real problem solving/software development project. Students will be required to gather functional requirements, identify the problem, form a solution and present this solution.
Assessment:

Coursework	70%
Final Examination - One 2-hour written paper	30%

LEVEL: III
SEMESTER: NOT OFFERED 2013/2014
COURSE CODE: INFO 3510
COURSE TITLE: NETWORKING FOR PROFESSIONALS
NUMBER OF CREDITS: 4
PREREQUISITES: INFO 2500
COURSE DESCRIPTION: This course introduces students to Local-Area-Network (LAN) switching equipment, protocols and topologies. Students learn about Classless Routing, RIP V2, Single Area OSPF, EIGRP, the Spanning Tree Protocol and differentiate between cut-through and store-and-forward LAN switching. Lab activities include implementing VLSM, RIP V2, OSPF, EIGRP, and trunking and routing VLANs. Students create virtual LANs and analyze various LAN segmentations.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: NOT OFFERED 2013/2014
COURSE CODE: INFO 3520
COURSE TITLE: DATABASE ADMINISTRATION FOR PROFESSIONALS
NUMBER OF CREDITS: 4
PREREQUISITES: INFO 2415
COURSE DESCRIPTION: This course introduces students to Database Administration. Students taking the course should have a basic understanding of how database concepts and SQL commands. The course provides practical experience in setting up and maintaining a MySQL/Oracle server, including backing up, recovery, configuration and optimization strategies.
This course is suitable for delegates intending to sit the 'Certified MySQL DBA I' and 'Certified MySQL DBA 2' examinations.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: NOT OFFERED 2013/2014
COURSE CODE: INFO 3530
COURSE TITLE: GEOGRAPHIC INFORMATION SYSTEMS FOR BUSINESS
NUMBER OF CREDITS: 4
PREREQUISITES: INFO 2415
COURSE DESCRIPTION: This course introduces students to the subject of geographic information systems. Students are introduced to the characteristics of geographical data including coordinate systems and projections. Spatial data models are presented with a view of laying the foundation to understanding the usefulness of Geographic Information Systems (GIS) in organizations that use geographic data. Database structure and design are delivered in the context of managing spatial records and analysis techniques for interrogating such data are discussed. GIS is also presented as a tool used to effect business process re-engineering; the type of Information System enhancement which can significantly alter the productivity of business positively.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: JAPA 1003
COURSE TITLE: LEVEL 1A JAPANESE
NUMBER OF CREDITS: 2
PREREQUISITES: NONE
COURSE DESCRIPTION: This is a beginners' Japanese couse that introduces students to the Japanese language and some aspects of Japanese culture and daily life. Classes are conducted as far as possible in the target language to give students maximum exposure to the new language and culture. During the course, students develop an ability to communicate in Japanese in basic situations relating to their personal lives. The course meets for four hours per week for 13 weeks. In addition, class contact time should be supplemented by two hours of independent study for each contact hour.
Assessment:
In-course testing: 100%:
40% [mid-semester];
40% [end of semester];
20% [two assignments]

LEVEL: I
SEMESTER: 2
COURSE CODE: JAPA 1004
COURSE TITLE: LEVEL 1B JAPANESE
NUMBER OF CREDITS: 2
PREREQUISITES: JAPA 1003/1A JAPANESE OR EQUIVALENT
COURSE DESCRIPTION: JAPA 1004 is the second part of the introductory Japanese programme continuing the work begun in JAPA 1003/1A Japanese. Classes are conducted as far as possible in the target language to give students maximum exposure to the language and culture during class time. During the course, students develop an ability to communicate in Japanese in basic situations relating to their personal lives. The course meets for four hours per week for 13 weeks. In addition, class contact time should be supplemented by two hours of independent study for each contact hour.
Assessment:
In-course testing: 100%:
40% [mid-semester];
40% [end of semester];
20% [two assignments]

LEVEL: 0 (PRELIMINARY)
SEMESTER: 1
COURSE CODE: MATH 0100
COURSE TITLE: PRE-CALCULUS
NUMBER OF CREDITS: 0
PREREQUISITES: CSEC MATHEMATICS OR EQUIVALENT
COURSE DESCRIPTION: The following topics will be treated with the minimum of rigour, but with emphasis on the understanding of the concepts involved.
Algebra: Elementary logic, number sets, real numbers, functions, inequalities, complex numbers, surds, logarithms, linear and quadratic equations, finite series, binomial theorem, mathematical induction.
Trigonometry: Trigonometric functions and their inverses, addition and multiplication formulae, identities, trigonometric equations, solutions of triangles.
Assessment:

Coursework - Test	40%
Final Examination - One 3-hour paper	60%

LEVEL: 0 (PRELIMINARY)
SEMESTER: 2
COURSE CODE: MATH 0110
COURSE TITLE: CALCULUS AND ANALYTICAL GEOMETRY
NUMBER OF CREDITS: 0
PREREQUISITES: CSEC MATHEMATICS OR EQUIVALENT
COURSE DESCRIPTION: The following topics will be treated with the minimum of rigour, but with emphasis on the understanding of the concepts involved. Calculus: Functions, limits, continuity, differentiability, higher derivatives and application, anti-derivatives, Simpson'srule and the integral. Elementary methods of integration and solutions of simple differential equations. Analytical Geometry: Equations and representations of elementary plane curves. Applications of calculus to determine equations of tangents, normals and in the computation of areas and volumes.
Assessment:

Coursework - Test	40%
Final Examination - One 3-hour paper	60%

LEVEL: I - UNDERGRADUATE SERVICE COURSE
SEMESTERS: 1, 2
COURSE CODE: MATH 1115
COURSE TITLE: FUNDAMENTAL MATHEMATICS FOR THE GENERAL SCIENCES I
NUMBER OF CREDITS: 3
PREREQUISITEs: NONE
NB: STUDENTS WITH ANY TWO UNITS OF CAPE LEVEL MATHEMATICS (OR EQUIVALENT), AGRI 1003 (MATHEMATICS FOR SCIENTISTS) AND/OR MATH 0100 (PRE-CALCULUS) WILL NOT RECEIVE CREDITS FOR THIS COURSE.
COURSE DESCRIPTION: Algebra: Types of numbers, scientific notation, precision and accuracy, manipulating numbers, factorials, inequalities, simultaneous equations, indices, partial fractions, quadratic equations, remainder theorem, solving polynomial equations. Functions: Logarithms, exponentials, inverse functions. Trigonometry: Trigonometric functions and their graphs, common identities, solution of trigonometric equations. Coordinate Geometry: gradients and intercepts, extrapolation techniques, linear regression. Statistics: Introduction to descriptive statistics, frequency distribution, mean, median, mode and standard deviation, measures of central tendency, normal and binomial distributions, chi-squared test.
Assessment:

Coursework	40%
Final Examination: One 2-hour written paper	60%

LEVEL: I - UNDERGRADUATE SERVICE COURSE
SEMESTERS: 1, 2
COURSE CODE: MATH 1125
COURSE TITLE: FUNDAMENTAL MATHEMATICS FOR THE GENERAL SCIENCES II
NUMBER OF CREDITS: 3
PREREQUISITES: EITHER CSEC MATHEMATICS (OR EQUIVALENT) OR MATH 1115
COURSE DESCRIPTION: Differentiation: Functions of a single real variable, polynomials, exponentials and basic trigonometric functions. Product, quotient and 'function of a function' rules. Implicit differentiation. Finding and classifying stationary points. Basic curve sketching for quadratic, polynomial, exponential and logarithmic functions. Application to velocity, acceleration, deceleration, distance traveled. Calculating rates of change. Basic rules for partial differentiation for functions of more than one real variable. Taylor series for a function of a single real variable. Limits: Concept of a limit. Evaluation of basic limits. Errors: precision of calculations, round-off errors. Integration: Definition as reverse of differentiation. Definite integrals and areas under curves. Integration by substitution (u=f(x)), integration by parts, integration by partial fractions. Calculation of work done. Differential Equations (Topic to be motivated by models of physical systems): First order separable and linear equations. Second order linear with constant coefficients - complementary functions and particular integrals
Assessment:

Coursework	40%
Final Examination: One 2-hour written paper	60%

LEVEL: 2
SEMESTER: II
COURSE CODE: MATH 1141
COURSE TITLE: INTRODUCTORY LINEAR ALGEBRA AND ANALYTICAL GEOMETRY
NUMBER OF CREDITS: 3
PREREQUISITES: TWO UNITS OF CAPE PURE MATHEMATICS, OR EQUIVALENT
COURSE DESCRIPTION: Vectors in two and three dimensions, the dot product and cross – product. Applications to geometry of lines and planes. Complex numbers as vectors. De Moivres Theorem; basic algebra of matrices of any order. Determinants. Solutions of systems of linear equations
Assessment:

Coursework	40%
Final Examination: One 2-hour written paper	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: MATH 1142
COURSE TITLE: CALCULUS I
NUMBER OF CREDITS: 3
PREREQUISITES: TWO UNITS (1&2) OF CAPE PURE MATHEMATICS OR MATH 0100 AND MATH 0110, OR EQUIVALENT
COURSE DESCRIPTION: Functions; elementary functions; definition of derivative and rules of differentiation. Applications to maxima, minima and curve tracing; Taylor and Maclaurin Series. Evaluation of indefinite integrals using substitution, integration by parts and partial fractions. Length of curve and areas of regions. First order differential equations and second order differential equations with constant coefficients.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: I
SEMESTER: 2
COURSE CODE: MATH 1151
COURSE TITLE: CALCULUS II
NUMBER OF CREDITS: 3
PREREQUISITES: TWO UNITS (1&2) OF CAPE PURE MATHEMATICS OR MATH 0100 AND MATH 0110. OR EQUIVALENT
COURSE DESCRIPTION: Neighbourhoods and bounds of a function; definition of limit; properties of limits; continuity; the Intermediate Value Theorem; The derivative; Rolle's Theorem; The Mean Value Theorem L'Hospital's Rule. The Riemann Integral : Fundamental Theorem of the Calculus. Partial Derivatives. Double integrals.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: I
SEMESTER: 1
COURSE CODE: MATH 1152
COURSE TITLE: SETS AND NUMBER SYSTEMS
NUMBER OF CREDITS: 3
PREREQUISITES: TWO UNITS OF CAPE PURE MATHEMATICS, OR MATH 0100 AND MATH 0110 OR EQUIVALENT
COURSE DESCRIPTION: Set Theory. Elementary mathematical logic: logical statements, logical operations AND, OR and NOT. Illustration using Venn diagrams, Algebra of Sets. Relations and Binary operation Properties of the natural numbers; basic arithmetic of complex numbers. The polar and exponential forms of a complex number.
Assessment:
Coursework 40%
Final Examination: One 2-hour written paper 60%

LEVEL: I
SEMESTER: 1
COURSE CODE: MATH 1160
COURSE TITLE: INTRODUCTORY APPLIED MATHEMATICS I
NUMBER OF CREDITS: 6
PREREQUISITES: TWO UNITS OF CAPE MATHEMATICS OR MATH 0100 AND MATH 0110, OR ITS EQUIVALENT
COURSE DESCRIPTION: Vectors. Introduction to Statics: Coplanar forces:- forces acting at a point, moments, parallel forces, couples.
Centre of Gravity.
Introduction to Newtonian Mechanics: Kinematics, dynamics of particle. Work, energy, momentum, conservation laws vertical motion in a resisting medium, projectiles.
Simple Harmonic Motion.
Assessment:
Coursework 40%
Final Examination - One 3-hour written paper 60%

LEVEL: I
SEMESTER: 2
COURSE CODE: MATH 1170
COURSE TITLE: INTRODUCTORY APPLIED MATHEMATICS II
NUMBER OF CREDITS: 6
PREREQUISITES: TWO UNITS OF CAPE MATHEMATICS OR MATH 0100 AND MATH 0110, OR ITS EQUIVALENT
COURSE DESCRIPTION: Central forces, conservation of energy. Elementary Hydrostatics: Definitions, equality of pressure, transmission of pressure, density. Conditions of Equilibrium, surface of equal pressure, heterogeneous liquid. Resultant thrust, centre of pressure.
Introduction to Hydrodynamics: Equations of motion, continuity equation, boundary conditions, Euler's equation of motion and applications. Mathematical modelling: Dynamics, linear and non-linear growth and decay.
Assessment:
Coursework 40%
Final Examination - One 3-hour written paper 60%

LEVEL: I
SEMESTER: 1 & 2
COURSE CODE: MATH 1191
COURSE TITLE: INTRODUCTION TO MATHEMATICAL SOFTWARE I
NUMBER OF CREDITS: 1
PREREQUISITES: TWO UNITS OF CAPE MATHEMATICS OR MATH 1125, OR EQUIVALENT
COURSE DESCRIPTION: The course consists of an introduction to Excel and Maple.
EXCEL
Basic operations; constructing and editing formulae; changing worksheet layout; sorting and filtering. Using the Analysis Tool pack; Statistical Analysis in Excel; Intro to Visual basic.
MAPLE
Introduction to arithmetical operations with real numbers, integers, vectors and matrices; symbolic computation; plots, including 3d plots; solving polynomial equations and systems of linear equations; calculus and differential equations; programming in Maple.
Assessment:

Coursework	100%

LEVEL: II
SEMESTERS: 1 AND EVENINGS - SEMESTER 1
COURSE CODE: MATH 2100
COURSE TITLE: ABSTRACT ALGEBRA
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 1140 OR MATH1141 AND MATH1152
COURSE DESCRIPTION: Fundamental concepts in Set Theory, and philosophy of sets. Relations and Functions: Algebra of permutations, Elementary Theory of Groups and Rings, group homomorphisms. Development of the number systems. Properties of the Natural Numbers, the Integers, the Rationals, the Reals and the Complex numbers. Infinite sets and their cardinalities. Transfinite arithmetic.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTERS: 2 AND EVENINGS - SEMESTER 2
COURSE CODE: MATH 2110
COURSE TITLE: LINEAR ALGEBRA
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 1140 OR MATH 1141 AND MATH 1152
COURSE DESCRIPTION: Abstract vector spaces: Linear dependence and basis and Linear transformations and their matrices; Elementary row transformations and elementary matrices, row equivalence and rank. Solutions of systems of linear equations. Determinants, The Gram-Schmidt Orthogonalisation Process; Characteristic roots and vectors. Similarity. Diagonalisation. Quadratic forms and their reduction; The Cayley-Hamilton Theorem.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTERS: 1 AND EVENINGS - SEMESTER 1
COURSE CODE: MATH 2120
COURSE TITLE: ANALYSIS & MATHEMATICAL METHODS I
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 1140 AND MATH 1150 OR MATH 1141, MATH 1142, MATH 1151 AND MATH 1152
COURSE DESCRIPTION: Limits of sequences of real numbers. Convergence of series of real terms. Tests for convergence of positive series. Comparison, quotient, ratio, nth root, integral tests. Absolute convergence. The alternating series test.
Power series: Functions of two (or more) real variables; limits, continuity, partial derivatives, differentiability, stationary points, Lagrange multipliers, Riemann double integral, change of variables and the Jacobian, polar, spherical and cylindrical coordinates, vector calculus, line, surface and volume integrals. Stokes and Gauss Divergence theorems.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTERS: 1 AND EVENINGS - SEMESTER 1
COURSE CODE: MATH 2140
COURSE TITLE: INTRODUCTION TO PROBABILITY
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 1140 OR MATH 1150 OR MATH 1141 AND MATH 1152 OR MATH 1142 AND MATH 1151
COURSE DESCRIPTION: Basic Probability rules, including Bayer's rule, theorem on total probability; Conditional Probability; Random Variable; Mathematical Expectation; means, variance; Convariance of variables. Variance of sum of n random variables. Chebychev's ís theorem; Standard density functions and mass functions; Moment generating function. Random sample; some important statistics, sampling distributions. Central limit theorem.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTERS: 2 AND EVENINGS - SEMESTER 2
COURSE CODE: MATH 2150
COURSE TITLE: INTRODUCTION TO STATISTICS
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2140 OR MATH 3110
COURSE DESCRIPTION: Theory of Estimation: Ideas of point estimation; mean-squared error; interval estimation; method of maximum likelihood; Cramer-Rao Inequality. Hypothesis Testing: Type I and Type II errors; tests concerning means, variances and proportions; Goodness of fit Tests; non-parametric tests.
Ideas of Regression Analysis including simple linear Regression in detail; Experimental Design and the Analysis of Variance (Completely Randomised Design, Block Designs, Latin Squares, Factorial Designs).
Assessment:

Coursework	40%
Final Examination - One 2-hour paper	60%

LEVEL: II
SEMESTERS: 2 AND EVENINGS - SEMESTER 2
COURSE CODE: MATH 2160
COURSE TITLE: ANALYSIS & MATHEMATICAL METHODS II
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 1140 AND MATH 1150 OR MATH 1141, MATH 1142, MATH 1151 AND MATH 1152
COURSE DESCRIPTION: The Laplace transform and applications to differential and integral equations. Ordinary linear differential equations, Wronskian, linear independence. Existence and uniqueness (no proofs). Classification of points of second-order differential equations. Series solutions about ordinary and regular singular points. Fourier series. Solution of the two-dimensional heat, wave and Laplace equation using the separation of variables technique. Functions of a single complex variable, continuity, differentiability, analyticity and the Cauchy-Riemann equations; power series and contour integrals, Cauchy'stheorem and integral formulae. Singularities and their classification. Residue theorem and its application to the evaluation of definite integrals.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: MATH 2170
COURSE TITLE: INTRODUCTION TO COMBINATORICS
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 1140 OR MATH 1141 AND MATH 1152
COURSE DESCRIPTION: Permutations and Combinations. The Inclusion - Exclusion Principle. Linear equations with unit coefficients; Recurrence relations; Generating functions; Geometry of the plane; Colouring problems; Combinatorial probability. Partitions of integer; Random walks; Designs.
Assessment:

Coursework	25%
Final Examination - One 2-hour written paper	75%

LEVEL: II
SEMESTER: 2
COURSE CODE: MATH 2180
COURSE TITLE: INTRODUCTION TO OPTIMIZATION
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 1140 OR MATH 1141 AND MATH 1152
COURSE DESCRIPTION: Graphs and Digraphs; Ranking; Shortest Path; Communication Networks; Convex sets; Linear programming; Simplex Method; Theory of games.
Assessment:

Coursework Examination	25%
Final Examination - One 2-hour written paper	75%

LEVEL: II
SEMESTER:1
COURSE CODE: MATH 2190
COURSE TITLE: PROBABILITY AND STATISTICS I
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 1140 OR MATH 1150 OR MATH 1141 AND MATH 1152 OR MATH1142 AND MATH 1151
N.B. STUDENTS TAKING MATH 2190 CANNOT ALSO GET CREDIT FOR MATH 2140 AND MATH 2150
COURSE DESCRIPTION: Foundations of Probability, basic discrete and continuous distributions; expectation. Joint distribution of several discrete and continuous random variables. Covariance and correlation. The Central Limit Theorem. Basic ideas of point and Interval Estimation. Maximum likelihood .
Estimation Type I and Type II errors, significance level and power. Hypothesis of means, variances and proportions. Regression Analysis (mainly simple linear regression). Experimental Design. One and two-way ANOVA. Basic ideas of sampling from finite populations.
Comment:
MATH 2190 is a four (4) credit alternative to both MATH 2140 and MATH 2150 and is primarily aimed at non-Mathematics Majors.
Assessment:

Coursework	40%
Final Examination - One 2-hour paper	60%

LEVEL: II
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: MATH 2200
COURSE TITLE: PROBABILITY AND STATISTICS II
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 2190
N.B. STUDENTS TAKING MATH 2190 CANNOT ALSO GET CREDIT FOR MATH 2140 AND MATH 2150
COURSE DESCRIPTION: Probability Theory: Conditional expectation for discrete random variables, Bayes Theorem, transformations of one random variable, evaluation of probabilities of events for continuous bivariate random variables transformations of two random variables, the squared distributions, moment generating functions; proof of the Central Limit Theorem, Markov and Chebychev inequalities, the weak law of large numbers. Statistical Inference: Unbiasedness, Fisher information and the Cramer-Rao inequality (without proof), sufficiency, the Fisher factorization criterion, the Neyman-Pearson lemma. Statistical Methods: Factorial designs; non-parametric rank methods, the sign test, squared rank test, rank sum test, Kruskal-Wallis test, goodness of fit tests. Sampling Theory of Surveys: Simple random samples, stratified samples, ideas underlying other sampling schemes, non-sampling sources of error including non-response and poor sampling design.
Assessment:

Coursework	40%
Final Examination - One 2-hour paper	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: MATH 2210
COURSE TITLE: MATHEMATICS OF FINANCE
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 1140 AND MATH 1150 OR MATH 1141, MATH 1142, MATH 1151 AND MATH 1152
COURSE DESCRIPTION: Introduction to actuarial science; measurement of interest; solutions of problems in interest, basic annuities; more general annuities, yield rates, amortization schedules and sinking funds, bonds and other securities, practical applications.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: MATH 2220
COURSE TITLE: INTRODUCTION TO ACTUARIAL MATHEMATICS
NUMBER OF CREDITS: 4
PREREQUISITES: (I) MATH 2140 OR MATH 3110, (II) MATH 2210
COURSE DESCRIPTION: Survival distributions and life tables, utility theory, life insurance, life annuities, commutation functions, net premiums and premium reserves, introduction to multiple life functions.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014COURSE CODE: MATH 3110
COURSE TITLE: MATHEMATICAL STATISTICS - PROBABILITY THEORY
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2120 AND PERMISSION OF THE HEAD OF DEPARTMENT
N.B. STUDENTS CANNOT GET CREDITS FOR BOTH MATH 2140 AND MATH 3110
COURSE DESCRIPTION: Basic Probability rules, including Bayesí rule, theorem on total probability; Conditional Probability; Random Variable; Mathematical Expectation; means, variance; Covariance of variables. Variance of sum of n random variables, Chebychevís theorem; Standard density functions and mass functions; Moment generating function. Random sample; some important statistics, sampling distributions. Central limit theorem. Transformations of several random variables; order statistics; conditional expectation; the bivariate and multivariate normal distributions.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: MATH 3120
COURSE TITLE: MATHEMATICAL STATISTICS - STATISTICAL INFERENCE
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 3110
N.B. STUDENTS CANNOT GET CREDITS FOR BOTH MATH 2150 AND MATH 3120
COURSE DESCRIPTION: Theory of Estimation: Ideas of point estimation; mean-squared error; interval estimation; method of maximum likelihood; Cramer-Rao Inequality. Hypothesis Testing: Type I and Type II errors; tests concerning means, variances and proportions; Goodness of fit Tests; non-parametric tests. Ideas of Regression Analysis including simple linear Regression in detail; Experimental Design and the Analysis of Variance (Completely Randomised Design, Block Designs, Latin Squares, Factorial Designs). Efficiency and the Fisher- Factorization Criterion; the Rao-Blackwell theorem.
Estimation from multinomial populations. Simple random, stratified, cluster and systematic sampling; non-sampling errors in surveys; likelihood ratio tests.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: MATH 3240
COURSE TITLE: REAL ANALYSIS
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 2120
COURSE DESCRIPTION: Properties of real numbers, real line topology (open sets, cluster points, compactness, connectedness). Introduction of topological spaces. Metric space. Continuity and homeomorphism. Point wise and uniform convergence of sequence and series of real valued functions.
Assessment:

Coursework	25%
Final Examination - One 2-hour written paper	75%

LEVEL: III
SEMESTER: 1
COURSE CODE: MATH 3250
COURSE TITLE: FLUID DYNAMICS I
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2120 AND MATH 2160
COURSE DESCRIPTION: Orthogonal Curvilinear Co-ordinates: Cartesian, Cylindrical and Spherical. Introduction to Tensors. Kinematics and Equations of motion for Inviscid fluids. Simple Inviscid Flows. Axisymmetric 3-D flows and Stokes stream function. Viscous flows: Navier-Stokes equations and some exact solutions.
Assessment:

Coursework	40%
Final Examination - one 2-hour written paper	60%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: MATH 3260
COURSE TITLE: FLUID DYNAMICS II
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 3250
COURSE DESCRIPTION: Further Two-dimensional Flows; Some Three -dimensional Flows; Viscous Flows
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: MATH 3280
COURSE TITLE: INTRODUCTION TO MATHEMATICAL MODELLING I
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2120 AND MATH 2160
COURSE DESCRIPTION: Idea of modelling real life and situations using Mathematics. Theory of ordinary differential equations (eigenvalues and eigenvectors) and the linear stability. Application to Medicine (e.g. testing of diabetics). Predator-Prey models (struggle for survival between two species). Epidemiology (e.g. model of the spread of gonorrhea). A theory of war.
Assessment:

Coursework	25%
Final Examination - One 2-hour written paper	75%

LEVEL: III
SEMESTER: 2
COURSE CODE: MATH 3290
COURSE TITLE: COMBINATORICS
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 2100 OR MATH 2110
COURSE DESCRIPTION: Permutations and Combinations; Generating functions; Recurrence Relations; The Principle of Inclusion and Exclusion; Matching polynomials and Rook polynomials; Polyaís theory of counting.
Assessment:

Coursework	25%
Final Examination - One 2-hour written paper	75%

LEVEL: III
SEMESTER: 1
COURSE CODE: MATH 3310
COURSE TITLE: LIFE CONTINGENCIES
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2140, MATH 2150 AND MATH2220
COURSE DESCRIPTION: Multiple life functions, multiple decrement model; insurance models Including expenses; non-forfeiture, benefits and dividends; valuation theory for pension plans.
Assessment:

Coursework (one in-course test)	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: MATH 3320
COURSE TITLE: Risk Theory
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2120, MATH 2140 AND MATH2150
COURSE DESCRIPTION: Review of earlier statistical work: individual risk theory; other frequency distributors,; mixed distributions; stoploss insurance; ruin theory
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

SEMESTER: 2
COURSE CODE: MATH 3321
COURSE TITLE: PRINCIPLES OF ASSET/LIABILITY MANAGEMENT FOR ACTUARIAL SCIENCE
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2210, MGMT 2023 AND MGMT 3048
COURSE DESCRIPTION: Review of Macroeconomics; characteristics of the various types of investments used to fund financial security programmes; traditional techniques of financial analysis used in selecting and managing investment portfolios. The course builds on the material in courses MGMT2023 (MS28D) and MGMT3048 (MS38H), introducing further tools and techniques of asset/liability management, general product design, as well as issues of pricing and valuation and asset management.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: MATH 3351
COURSE TITLE: REGRESSION AND TIME SERIES ANALYSIS
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 2140 AND MATH 2150
COURSE DESCRIPTION: This course continue on the applied aspects of M25B such as analysis of variance, regression analysis, design of experiments and categorical data analysis, time series analysis, stochastic processes and decision theory.
Assessment:

Coursework:	
In-course Tests	30%
Assignments	10%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: MATH 3354
COURSE TITLE: ACTUARIAL PROJECT
NUMBER OF CREDITS: 4
PREREQUISITE: MATH2210, MATH2220 AND MATH3310
COURSE DESCRIPTION: This course requires the student to develop an actuarial solution to a problem define of an appropriate scope. The project may be application oriented where the student builds a business solution similar to what is required to solve actuarial problems. The project should require the student to draw on the skills developed across several Actuarial Science courses.
Assessment:

Coursework:	
Project report	80%
Presentation	20%

LEVEL: III
SEMESTER: 1
COURSE CODE: MATH 3400
COURSE TITLE: GRAPH THEORY
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 2100
COURSE DESCRIPTION: Graphs: Trees, Spanning trees Algorithms for spanning trees, and for tree-coding Planarity, Colouring Network Algorithms: Matchings, Graph polynomials Applications in Operations Research.
Assessment:
Coursework 15%
Final Examination - One 2-hour written paper 85%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: MATH 3410
COURSE TITLE: COMBINATORICS AND COMPUTING
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 1400, COMP 1401, COMP 1404 AND COMP 1405
MATH 2170 AND MATH 2180
COURSE DESCRIPTION: Analysis of Algorithms, Theoretical methods for analyzing algorithms, Implementation of algorithms for generating permutations, combinations, compositions, sub-compositions etc. Computer representations of graphs; their advantages and disadvantages. Developing Algorithms for finding standard sub graphs of graphs, for example spanning trees, optimal spanning trees, Hamiltonian cycles. Implementation of algorithms for finding various kinds of F-polynomials. Coding of trees.
Assessment:
Coursework - A project consisting of a computer implementation together with a project report 25%
Final Examination - One 2-hour written paper 75%

LEVEL: III
SEMESTER: NOT OFFERED IN 2013/2014
COURSE CODE: MATH 3420
COURSE TITLE: SPECIAL TOPICS IN GRAPH THEORY
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2170, MATH 2180 AND MATH 3400
COURSE DESCRIPTION: The syllabus and content at any one time will depend on the research interests of the lecturer ; for example, F-Polynomials of Graphs. Relevant course material will be made available.
Assessment:
Coursework - A project accounting for 25%
(a) project report 15%
(b) 1-hour seminar 10%
Final Examination - One 2-hour written paper 75%

LEVEL: III
SEMESTER: 1
COURSE CODE: MATH 3430
COURSE TITLE: ADVANCED ALGEBRA I - THEORY
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2100 AND MATH 2110
COURSE DESCRIPTION: Group Theory: Fundamentals, Cyclic groups, Cosets, Homomorphism Theorems; The Sylow Theorems, Theory of p-groups, Direct products of groups, Solvable groups.
Ring Theory: Ideals; Quotient rings, Polynomial Rings, Euclidean Domains. Unique factorization domains; Irreducible criteria. Field Theory: Characteristics of Fields, Fields of Quotients, Sub-fields and Field Extensions, Splitting Fields, Elements of Galois Theory.
Assessment:
Coursework - (Assignment 5%) 25%
(Two written exams 10% each)
Final Examination - One 2-hour written paper 75%

LEVEL: III
SEMESTER: 2
COURSE CODE: MATH 3440
COURSE TITLE: ADVANCED ALGEBRA II - APPLICATIONS
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 3430
COURSE DESCRIPTION: Straight-edge and Compass constructions; Coding theory; Polynomial and matrix representation of codes; Applied Linear Algebra; Change of basis; Linear transformation; Functions of matrices; The Jordan Canonical form of a matrix; Solution of systems of differential equations; Quadric surfaces.
Assessment:
Coursework - (Assignment 5%) 25%
(Two written exams 10% each)
Final Examination - One 2-hour written paper 75%

LEVEL: III
SEMESTER: 1
COURSE CODE: MATH 3450
COURSE TITLE: STATISTICAL THEORY I
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2120 AND EITHER MATH 2140 OR MATH3110
COURSE DESCRIPTION: Joint and Conditional Distributions; Distribution of Functions of Random variables; Moment Generating Function Techniques; Order statistics; Poisson Process; Finite Markov Chains; Introduction to Queueing Theory.
Assessment:
Coursework 40%
Final Examination - One 2-hour written paper 60%

LEVEL: III
SEMESTER: 2
COURSE CODE: MATH 3460
COURSE TITLE: STATISTICAL THEORY II
NUMBER OF CREDITS: 4
PREREQUISITES:
(I) MATH 2140 OR MATH 3110 (II) MATH 2150 OR MATH 3120 (III) MATH 2120
COURSE DESCRIPTION: Methods of finding estimators and their properties Bayesian Inference; Regression Analysis; Time Series Analysis; Testing of Hypotheses; Design of Experiments; Sampling Theory.
Assessment:

Coursework	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: MATH 3470
COURSE TITLE: SAMPLING THEORY
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2150 OR ECON 2006 (MINIMUM QUALITY POINTS 3.3)
COURSE DESCRIPTION: Basic ideas concerning the design and uses of sample surveys.
Sampling techniques: Simple random sampling (with derivations of basic results), Stratified sampling, Cluster sampling (one and two stage). Systematic sampling. Non-response and missing data in sample surveys.
Designing forms and collecting data. Interpretation of data and survey report writing.
Topics in the sampling of non-human populations.
Assessment:

Coursework - (in-course examinations and projects)	40%
Final Examination - One 2-hour written paper	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: MATH 3500
COURSE TITLE: COMPLEX ANALYSIS
NUMBER OF CREDITS: 4
PREREQUISITES: MATH 2120 AND MATH 2160
COURSE DESCRIPTION: Analytic functions, Elementary functions, Advanced complex integration (for many valued functions). Conformal mapping (Mobius transformation and their properties). The Schwarz Christoffel transformation. Power series (convergence, absolute convergence and uniform convergence), sequence and series of functions. Zeros and poles of meromorphic functions. Analytic continuation.
Assessment:

Coursework	25%
Final Examination - One 2-hour written paper	75%

LEVEL: II
SEMESTERS: 2
COURSE CODE: MGMT 2003
COURSE TITLE: PRINCIPLES OF MARKETING
NUMBER OF CREDITS: 3
PREREQUISITES: ECON 1001 AND ACCT 1002
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: This course is intended to provide students with the conceptual framework and analytical skills necessary for the analysis of markets and marketing activities of firms in a dynamic environment.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: MGMT 2006
COURSE TITLE: MANAGEMENT INFORMATION SYSTEMS I
NUMBER OF CREDITS: 3
PREREQUISITES: NONE
COURSE DESCRIPTION: This course provides an overview of Management Information Systems. It describes the components of Management Information Systems and the relationship of MIS to the larger area of Organisation and Management. Information Systems Technology is covered.
Assessment:

Coursework	25%
Final Examination	75%

LEVEL: II
SEMESTER:
COURSE CODE: MGMT 2007
COURSE TITLE: INTRODUCTION TO E-COMMERCE
NUMBER OF CREDITS: 3
PREREQUISITES/CO-REQUISITE: MKTG 2080 AND MGMT 2006
COURSE DESCRIPTION: This course aims to prepare students with the requisite fundamentals to enable them to provide the business perspective/inputs to the e-commerce adoption process. Emphasis will be on the underlying commercial principles of e-commerce rather than on the technological processes. Topics to be covered include: internet demographics; internet business models; customer support strategies; security issues in e-commerce; legal issues in e-commerce; logistical challenges for Caribbean e-commerce.
Assessment:

Coursework	40%
Final Examination	60%

LEVEL:II
SEMESTERS: 2
COURSE CODE: MGMT 2008
COURSE TITLE: ORGANISATIONAL BEHAVIOUR
NUMBER OF CREDITS: 3
PREREQUISITES FOR CHEMISTRY AND MANAGEMENT STUDENTS: SOCI 1002 OR MGMT 1001 OR AGEX 1000
FOR COMPUTER SCIENCE AND MANAGEMENT STUDENTS: SOCI 1002 OR MGMT 1001 OR AGEX 1000 OR COMP 1100
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: This course uses the systems approach to organisations to highlight how interrelated variables such as people, technology, task, structure and external environments impact on organisational effectiveness. Emphasis is on the nature of behavioural issues and how and why they impact on the functioning of organisations.
Assessment:
Coursework 40%
Final Examination 60%

LEVEL:
SEMESTER: 1
COURSE CODE: MGMT 2012
COURSE TITLE: QUANTITATIVE METHODS
NUMBER OF CREDITS: 3
PREREQUISITES: FOR CHEMISTRY AND MANAGEMENT STUDENTS: ECON 1001 AND CHEM1060
FOR COMPUTER SCIENCE & MANAGEMENT STUDENTS: ECON1002 AND MATH1140
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: This course is an introductory level survey of quantitative techniques commonly used to provide insight into business decisions. The primary emphasis is on preparing the student to become an intelligent user of these techniques.
Assessment:
Coursework 25%
Final Examination 75%

LEVEL: II
SEMESTERS: 2
COURSE CODE: MGMT 2021
COURSE TITLE: BUSINESS LAW
NUMBER OF CREDITS: 3
PREREQUISITES: NONE
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: The main focus of this course is the general principles of the law of contract, the law of Agency as well as other related areas of interest like the Sale of Goods Act and the Hire Purchase Act 1938 and 1954. Background material covers the role and function of the law in society, the sources of the law, the legal system etc.
Assessment:
Coursework 25%
Final Examination 75%

LEVEL: II
SEMESTERS: 2
COURSE CODE: MGMT 2023
COURSE TITLE: FINANCIAL MANAGEMENT I
NUMBER OF CREDITS: 3
PREREQUISITES:
For Chemistry and Management Students:
ACCT 1002 AND ECON 1003 OR CHEM1060
For Computer Science & Management Students:
ACCT 1002 AND MATH 1140
For BSc Actuarial Students:
ECON 1002 AND ACCT 1002
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: This course is concerned with the core concepts of financial decision-making; the time-value of money, the cost of capital and trade-offs between risk and return. Students should develop a thorough understanding of these basic concepts and how to apply them in real-world examples
Assessment:
Coursework 40%
Final Examination 60%

LEVEL: II
SEMESTER: 2
COURSE CODE: MGMT 2032
COURSE TITLE: MANAGERIAL ECONOMICS
NUMBER OF CREDITS: 3
PREREQUISITES:
For Chemistry and Management Students:
ECON 1001 AND CHEM 1060
For Computer Science & Management Students:
ECON1002 AND MATH1140
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: This course is concerned with the application of economic principles and methodologies to the decision-making process of the business firm operating under conditions of risk and uncertainty. Emphasis is also placed on the firm's competitive strategy.
Assessment:
Coursework 25%
Final Examination 75%

LEVEL: III
SEMESTER: 1
COURSE CODE: MKTG 3000
COURSE TITLE: MARKETING MANAGEMENT
NUMBER OF CREDITS: 3
PREREQUISITES: MGMT 2003
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: This course is concerned with the development of the student's marketing decision-making and students are expected to undertake a marketing project based on fieldwork.
Assessment:
Coursework 30%
Final Examination 70%

LEVEL: III
SEMESTER:
COURSE CODE: MGMT 3011
COURSE TITLE: MANAGEMENT INFORMATION SYSTEMS II (ANALYSIS AND DESIGN)
NUMBER OF CREDITS: 3
PREREQUISITES: MGMT 2006
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: This course addresses the need for managers to understand the requirements for Information Systems, to participate in the design of systems and to manage the procurement of systems.

LEVEL: III
SEMESTER: 1
COURSE CODE: MGMT 3017
COURSE TITLE: HUMAN RESOURCE MANAGEMENT
NUMBER OF CREDITS: 3
PREREQUISITES: MGMT 2008
DEPARTMENT RESPONSIBLE: MANAGEMENT STUDIES
COURSE DESCRIPTION: This course provides participants with a broad overview of issues pertaining to human resource management with special reference to the Caribbean environment.

LEVEL: III
SEMESTER: 2
COURSE CODE: MKTG 3007
COURSE TITLE: MARKETING PLANNING
NUMBER OF CREDITS: 3
PREREQUISITES: MGMT 2003, MGMT 2012 AND MGMT 2023
COURSE DESCRIPTION: This intention is to equip students with the tools necessary for effective marketing planning in the public and private sectors. Analytical methods and data sources necessary in defining competition, analysing an industry and customers, and forecasting market potential is covered in depth. Students are expected to develop an actual marketing plan as a coursework project.
Assessment:

Coursework	30%
Final Examination	70%

LEVEL: III
SEMESTER: 1
COURSE CODE: MGMT 3057
COURSE TITLE: PRODUCTION AND OPERATIONS
NUMBER OF CREDITS: 3
PREREQUISITES: MGMT 2012
COURSE DESCRIPTION: This course is intended to present students with an up-to-date view of primary activities of the production/operations functions in organisations. The production/operations function is an area of management that has a profound effect on efficiency, productivity and the quality of our daily lives. Focusing on Caribbean economies, the course will examine the resources that are required in the production of goods and services and illustrate the method of their acquisition utilisation, and upkeep. The topics to be covered will be shown to apply not only to the manufacturing sector but to the service sectors as well such as banks, hospitals, etc.
Assessment:

Coursework	30%
Final Examination	70%

LEVEL: III
SEMESTER: 2
COURSE CODE: MGMT 3060
COURSE TITLE: OPERATIONS, PLANNING AND CONTROL
NUMBER OF CREDITS: 3
PREREQUISITES: MGMT 3057
COURSE DESCRIPTION: Building on the earlier course in Production and Operations Management, this course is intended to illustrate the array of planning and control techniques available to management to ensure the maximum productivity, quality, efficiency and profitability of the various operation systems involved in the production of goods and services.
Assessment:

Coursework	25%
Final Examination	75%

LEVEL: 0 (PRELIMINARY)
SEMESTER: 1
COURSE CODE: PHYS 0070
COURSE TITLE: PRELIMINARY PHYSICS I
NUMBER OF CREDITS: 0
PREREQUISITES: CSEC PHYSICS OR EQUIVALENT.
COURSE DESCRIPTION: Mechanics, Heat and Waves & Sound.
SI system and standard units, dimensional analysis, vectors (graphical analytical); Equilibrium, Newton's first law, third law, friction, motion in a straight line, average and instances velocity and acceleration, accelerated motion, free fall. Relative velocity; motion in a plane, projectiles, circular motion, centripetal force, Newton's second law and applications; Gravitation, mass and weight, satellite motion; Work and kinetic energy, gravitational and elastic potential energy, dissipative and conservative forces, power, equilibrium: Stress, strain, elastic moduli, force constant, Hooke's law, simple harmonic motion (basic concepts), SHM and circular motion, mass-spring system, simple pendulum, pressure in a fluid, pressure gauges. Archimedes principle, surface tension, pressure difference across surface film, contact angle and capillaries. Bernoulli's equation (applications), viscosity, Stoke's law, Reynold's number.
The temperature concept, thermometers, scales, thermal expansion and stress; Heat capacity, phase changes, conduction, convection, radiation, Stefan-Boltzman law, ideal radiator, solar energy, ideal gas, equation of state, phase diagrams, triple and critical points, vapour pressure, effect of dissolved substances on freezing and boiling point, first law of thermodynamics, energy and work, work and heat, adiabatic, isochoric, isothermal and isobaric processes, internal energy, molecular theory of motion, kinetic theory of ideal gas.
Mechanical waves, periodic waves, wave speed, traveling waves, mathematical representation, waves at boundaries, standing waves, interference of sound waves, beats, sound intensity, the decibel, the ear and hearing, quality and pitch, Doppler effect, ultrasonics and applications.
Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 3-hour Final Examination	60%

Students must pass coursework

LEVEL: 0 (PRELIMINARY)
SEMESTER: 2
COURSE CODE: PHYS 0071
COURSE TITLE: PRELIMINARY PHYSICS II
NUMBER OF CREDITS: 0
PREREQUISITES: CSEC PHYSICS OR EQUIVALENT.
COURSE DESCRIPTION: Electricity and Magnetism, Optics and Modern Physics Charge, Coulomb's law, insulators and conductors, electric field , lines of force, electric potential, potential differences, electron volt (Millikan's experiment,). Capacitance, series and parallel combination, energy in a charged capacitor, dielectrics, current, resistivity, resistance, EMF, work and power, resistors in series and parallel, Kirchoff's laws, Wheatstone bridge and potentiometer. The magnetic field, lines of force, magnetic flux, motion in a magnetic field. Thomson's measurement of e/m, isotopes and spectrography; force on conductor, torque on a current loop, the d.c. motor, pivoted-coil galvanometer, magnetic field of a long straight wire, force between parallel conductors, the ampere, induced emf, Faraday's law, Lenz's law, eddy currents.
The nature of light, speed of light (experimental), waves and rays, refraction and reflection. Snell's law, total internal reflection, dispersion, single surface images, reflection from plane and spherical surfaces, focal point and length, refraction at plane and spherical surfaces, graphical and analytical methods, images and objects, thin lens, diverging lens, lensmaker equation, aberrations, the eye, defects of vision, magnifier, camera projector, compound microscope, telescope,
Atomic nucleus, nuclear radiation, isotopes and isobars, binding energy and stability; alpha, beta and gamma rays, decay law, half-life, decay constant, activity, radioactivity series, nuclear reactions, nuclear fission, nuclear fusion, radioactive shielding, radiation and the life sciences.
Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 3-hour Final Examination	60%

Students must pass coursework

LEVEL: I
SEMESTER:2
COURSE CODE: PHYS 1001
COURSE TITLE: INTRODUCTION TO ASTRONOMY
NUMBER OF CREDITS : 3
PRE -REQUISITES: NONE
RESTRICTIONS: STUDENTS READING PHYS 2153 OR PHYS 3383 CANNOT BE CREDITED WITH THIS COURSE.
COURSE DESCRIPTION: This course develops the ideas of Ancient Astronomy leading up to the contributions of Copernicus, Brahe, Galileo and Newton. Optics and instrumentation. The solar system, stars: composition and evolution, white dwarfs, neutron stars, black holes. Extragalactic Astronomy: Galaxies, dark matter, dark energy, Cosmology. Life in the Universe.
Assessment:

Coursework	40%
One 2- hour Final Examination	60%

LEVEL: I
SEMESTER: 1
COURSE CODE: PHYS 1211
COURSE TITLE: INTRODUCTION TO MECHANICS AND HEAT
NUMBER OF CREDITS: 3
PREREQUISITES: CAPE PHYSICS (UNITS I AND II) OR CAPE MATHEMATICS (UNITS I AND II) AND CSEC (CXC) PHYSICS OR PHYS 0070 AND PHYS 0071 OR THEIR EQUIVALENT
COURSE DESCRIPTION: Newtonian mechanics including: kinematics, laws of motion, work and energy, systems of particles, momentum, circular motion, oscillations, and gravitation and concludes with topics in fluid mechanics, thermal physics, and kinetic theory
Assessment:

Final Examination (one 2-hr paper):	60%
Coursework:	40%

LEVEL: I
SEMESTER: 2
COURSE CODE: PHYS 1212
COURSE TITLE: INTRODUCTION TO ELECTRICITY & MAGNETISM AND MODERN PHYSICS
NUMBER OF CREDITS: 3
PREREQUISITES: CAPE PHYSICS (UNITS I AND II) OR CAPE MATHEMATICS (UNITS I AND II) AND CSEC (CXC) PHYSICS OR PHYS 0070 AND PHYS 0071 OR THEIR EQUIVALENT
COURSE DESCRIPTION: Electrostatics: Charge, Coulombs Law, The Electric Field and its determination by integration and Gauss's Law; Work, Energy and Electric Potential; Potential for point charge and extended sources; Determination of Electric Field from electric potential and vice versa; Capacitance; Energy stored in capacitors; Dielectrics; **Current Electricity**; Field within a wire; Electric current; Current Density; Ohm's Law; Resistance across a coaxial cable; Resistances in series and parallel; Energy dissipated; DC circuits and Kirchhoff's Law; Charging and discharging of capacitors; Time constant; **Magnetism**: The phenomenon; Definition of the magnetic force and comparison with the electric force and gravitation; Force on a wire carrying a current; torque on a rectangular wire carrying a current; Motion of charge in a magnetic field; Lorentz force; Mass spectrometer, cyclotron; Hall Effect; Biot-Savart Law; Ampere's Law and applications; Earth's magnetic Field Faraday's Law; B,H and M vectors; Inductance; Combination of laws to introduce Maxwell's Electromagnetic equation for free space propagation; **AC Theory**: AC currents and voltages; Complex and Vector and Phasor representations; LCR circuits, Q factor, power; Transformers; **Introduction to Modern Physics**: Modern Physics: Black body radiation, Thermal radiation; Stefan's, Wein's and Rayleigh-Jean's Laws; Quanta; Planck's Law; Photoelectric effect; Davisson-Germer and Thomson's experiments; The Atom; Atomic spectra; Energy levels and the Hydrogen Atom; Bohr model; X-rays; Moseley's Law.
Assessment:

Final Examination (one 2-hr paper):	60%
Coursework:	40%

LEVEL: I
SEMESTER: 1
COURSE CODE: PHYS 1213
COURSE TITLE: INTRODUCTION TO OSCILLATIONS AND WAVES
NO. OF CREDITS: 1.5
PREREQUISITES: CAPE PHYSICS (UNITS I AND II) OR CAPE MATHEMATICS (UNITS I AND II) AND CSEC (CXC) PHYSICS OR PHYS 0070 AND PHYS 0071 OR THEIR EQUIVALENT
COURSE DESCRIPTION: Oscillations and the analysis of oscillations. Acoustics: Wave propagation and velocity in elastic media, wave concepts: power intensity, superposition, coherence, interference and resonance. Types of waves: ultrasonic, audible and infrasonic. Theory of vibrating systems, sources of sound, Doppler effect. Electromagnetic waves: theory of transverse waves with examples.
Assessment:

-	Coursework (1 in-course test)	40%
-	Quiz	25%
-	Class participation	15%
-	Poster presentation	20%

LEVEL: I
SEMESTER: 1
COURSE CODE: PHYS 1214
COURSE TITLE: INTRODUCTORY PHYSICS LABORATORY I
NO. OF CREDITS: 1.5
PREREQUISITES: CAPE PHYSICS (UNITS I AND II) OR CAPE MATHEMATICS (UNITS I AND II) AND CSEC (CXC) PHYSICS OR PHYS 0070 AND PHYS 0071 OR THEIR EQUIVALENT
COURSE DESCRIPTION: Nine (9) experiments are to be performed. The students will be expected to perform the laboratory exercises and collect their data and depending on the complexity of the exercise will submit the written report at the end of the exercise or submit it the following week for assessment.
Assessment:
Coursework 100%
Students will be required to submit the lab report for each of the experiment they will perform. Each lab will be marked and this will constitute the coursework.

LEVEL: I
SEMESTER: 2
COURSE CODE: PHYS 1215
COURSE TITLE: INTRODUCTORY PHYSICS LABORATORY II
NO. OF CREDITS: 1.5
PREREQUISITES: CAPE PHYSICS (UNITS I AND II) or CAPE MATHEMATICS (UNITS I AND II) and CSEC (CXC) PHYSICS OR PHYS 0070 AND PHYS 0071 or their equivalent.
COURSE DESCRIPTION: Nine (9) experiments are to be performed. The students will be expected to perform the laboratory exercises and collect their data and depending on the complexity of the exercise will submit the written report at the end of the exercise or submit it the following week for assessment.
Assessment:
Coursework 100%
Students will be required to submit the lab report for each of the experiment they will perform. Each lab will be marked and this will constitute the coursework.

LEVEL: I
SEMESTER: 2
COURSE CODE: PHYS 1216
COURSE TITLE: INTRODUCTION TO OPTICS
NO. OF CREDITS: 1.5
PREREQUISITES: CAPE PHYSICS (UNITS I AND II) or CAPE MATHEMATICS (UNITS I AND II) and CSEC (CXC) PHYSICS OR PHYS 0070 AND PHYS 0071 or THEIR EQUIVALENT
COURSE DESCRIPTION: The visible spectrum: intensity & dispersion, superposition of light from coherent & incoherent sources, interference thin films, diffraction of light and diffraction gratings, calculation of intensity.
Assessment:

Final Examination (one 2-hr paper):	40%
Coursework:	60%

LEVEL: II
SEMESTER:1
COURSE CODE: PHYS 2150
COURSE TITLE: MATHEMATICS FOR PHYSICISTS
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111, or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Probability and Statistics: Introduction to probability, Methods of counting, Conditional probability, Distribution functions, Sampling theory, Applications in Physics; Cartesian and Curvilinear Coordinate Systems; Vector Analysis; Complex Variable Theory; Fourier Series Analysis; Differential Equations (up to second order); and Applications of these methods in Physics.
Assessment:

Coursework	40%
Final Examination (one 2-hour paper)	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: PHYS 2151
COURSE TITLE: CLASSICAL AND STATISTICAL MECHANICS
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 AND PHYS 1111, or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 And PHYS 1216
COURSE DESCRIPTION:
Classical Mechanics:

- Introduction to Newtonian Mechanics: Newton's laws, inertial and non-inertial systems. Systems of particles and centre of mass. Conservation laws and collisions.
- Central Force Motion: Central force motion as a one-body problem. Properties of motion under a central force. General force field orbits and effective potential. Kepler's laws of planetary motion. Perturbed circular orbits.
- Lagrangian and Hamiltonian Dynamics: Mechanics of a particle and a system of particles. Generalized coordinates and constraints. D'Alembert's principle and Lagrange's equation. Simple applications of the Lagrangian formulation. Hamilton's principle. Derivation of Lagrange's equations from Hamilton's principle. Hamilton's equation of motion. Derivation of Hamilton's equations from a variational principle. Hamiltonian phase space. Liouville's theorem. The Principle of Least Action.

Statistical Mechanics:

- Thermodynamics: Equilibrium and state quantities. The laws of thermodynamics. Thermodynamic potentials. The statistical basis of thermodynamics.
- Classical Statistics: Phase space of a classical system. The micro-canonical ensemble. The canonical ensemble. The grand canonical ensemble. Derivation of thermodynamics. Equipartition theorem. Kinetic theory of a dilute gas. The Maxwell-Boltzmann distribution. Gibbs paradox.

Quantum Statistics:

- Quantum mechanical ensemble theory: the density matrix. Statistics of the various ensembles. Systems composed of indistinguishable particles.
- Ideal systems: Photon gas , phonon gas, electrons in metals, classical ideal gases,
- Phase transitions

Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: PHYS 2152
COURSE TITLE: VIBRATIONS, WAVES AND OPTICS
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111, or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Optics: Review of thin lens imaging; reflection and refraction at a spherical surface; Lensmaker formula; Vergence and refracting power; Newtonian equation for a thin lens; Matrix methods; Aberration Theory.
Oscillations and Waves: Simple, damped and forced harmonic motion; Equations of motion and their solutions; Different aspects and applications of these motions; Equation of wave motion in one dimension; Longitudinal and transverse waves and the consideration of different examples of the propagation of these waves.

Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: PHYS 2153
COURSE TITLE: ASTROPHYSICS
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 AND PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213,PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION:
Special Relativity (10 lectures)**:** Introduction to theory of Special Relativity: Galiliean transformation, Postulates of Special Relativity, Lorentz transformation equations. The Foundations of Special Relativity.Relativistic kinematics and Relativistic Particle Mechanics.Space-time intervals and Minkowski diagrams.
Astronomy (15 lectures): Observational Instruments, Celestial Sphere and coordinate systems, Solar System, Astrobiology, Stars and their evolution, Galaxies, Extragalactic Astronomy, Cosmology and New Frontiers.

Assessment:

Coursework	40%
Final Examination (one 2 hour paper)	60%

LEVEL: II
SEMESTER: YEAR-LONG
COURSE CODE: PHYS 2155
COURSE TITLE: MAJOR LABORATORY LEVEL II
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111, or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Laboratory experiments and numerical modelling using MAPLE and/or MATLAB are to be performed corresponding to the theory courses of the Major. The students will be expected to perform the exercises and collect their data and depending on the complexity of the exercise will submit the written report at the end of the exercise or submit it the following week for assessment.
Assessment:
Coursework: 100%
The students will be required to submit the lab report for each of the experiment they will perform. Each lab will be marked and this will constitute the coursework.

LEVEL: II
SEMESTER: 1
COURSE CODE: PHYS 2156
COURSE TITLE: METEOROLOGY AND CLIMATOLOGY
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Meteorology: Structure and composition of the atmosphere. Meteorological elements and measurements. Physical processes in the atmosphere. Atmosphere motion and circulation, Geostrophic wind, gradient wind, cyclones, thermal wind, frictional effects, vorticity. The general circulation, frontal systems, circulation and disturbances of the tropics. Climatology and pollution: Climate controls, classification, regional climates, climates of the Caribbean. Land use, water resources, pollution.Aerosols.El Nino-Southern Oscillation.ITCZ.
Assessment:

Coursework	40%
Final Examination (One 2-hour paper)	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: PHYS 2157
COURSE TITLE: SOLID EARTH GEOPHYSICS
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Physics of the Earth: The shape of the Earth: The Geoid and reference Spheroid, Gravity of the Earth, Measurement of gravity, Corrections to gravity measurements (gravity reductions); Latitude; Elevation; Topographs of surrounding terrain; Earth tides, and Density variations in the subsurface. Testing Isostasy by gravity measurements.Geoid height anomalies.

Gravity Prospecting; Earth's internal structure and origin; Heat Flow: Continental and Oceanic. Geophysical Prospecting:Propagation of seismic waves, The principles of seismic refraction and reflection. Electrical properties of rocks and minerals,Electrical prospecting methods: self-potential, dc resistivity, Wenner and Schlumberger arrangements. Earth's Magnetic Field and Magnetic Prospecting.
Assessment:

Coursework	40%
Final Examination (One 2-hour paper)	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: PHYS 2159
COURSE TITLE: INTRODUCTORY MEDICAL PHYSICS & BIOENGINEERING
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: The structure, function, properties and Physics of bone, muscles, cardiovascular and nervous system.Feedback and Control systems in the body and homeostatis.
Biomedical potentials, electrooculogram (EOG), electrocardiogram (ECG), electromyogram (EMG), electroencephalogram (EEG) and magnetocardiogram (MCG).The visual system and the auditory system.
Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: PHYS 2160
COURSE TITLE: ADVANCED MEDICAL PHYSICS AND BIOENGINEERING
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 AND PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Review of radiation interaction with matter; Medical radiation sources and their applications in diagnosis and therapy (focus on detectors, scanners and image processing in the medical environment); Nuclear medicine: radioisotopes, tracer studies and system modeling; Biomechanics as applied in orthopaedic and cardiac surgery; Biomaterials: focusing on the properties of implantable materials and their preparation for implantation; Kinetic and blood flow studies.
Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: PHYS 2162
COURSE TITLE: Digital Electronics I
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: The course is updated regularly. Any amendments will be given to students at the start of the course.

- Basic theory and applications of electronic and optoelectronic components and devices such asdiodes, zener diodes, SCRs, LEDs, LDs, PVs, optical receivers, optical fibres.
- Comparison of analogue and digital systems.
- Basic logical functions NOT, AND, OR and duality.
- Boolean algebra and computational rules.
- Input and output variables and generalized logical systems, NAND, NOR, EXCLUSIVE OR.
- Combinational logic systems.
- Simplification of logic equations by Boolean algebra and Karnaugh maps for up to four variables.
- Introduction to sequential systems.

Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: PHYS 2163
COURSE TITLE: ANALOG ELECTRONICS I
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Analog System Building Blocks: Multivibrator and applications, Operational amplifier and applications, analog computer. Classical Control Theory: Introduction to control systems, mathematical representation of control systems, application of Laplace and Z-Transformations, transfer functions, canonical form. Measure of Performance: Stability, steady state accuracy, satisfactory transient response, satisfactory frequency response.Methods of Analysis: Nyquist's, root locus and Bode analysis. Methods of Improving System Performance: Gain and phase compensation techniques.
Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: PHYS 2165
COURSE TITLE: MATERIALS SCIENCE I
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: The scope of materials science, importance of studying materials, interdisciplinary nature of materials science, principal aim to relate properties to structure, brief historical survey, the basic classification of materials – metals, polymer, ceramics, alloys, composites with brief description of structure, properties and applications.

The Structure of Solids:Structure of atom, molecules, bonding, relationship between bonding and properties, thermal vibration and structure sensitivity, crystal structure, lattice parameters, crystal geometries, defects in materials, point defects, line defects, area defects, defects in polymers, strengthening mechanisms, alloys. Amorphous structure, microstructure, alloys and composites.

Phase Diagrams:Introduction, solubility limit, phases, microstructure, phase equilibria, unary and binary phases, interpretation of phase diagrams, lever rule, eutectic and eutectoid alloys (binary systems), Iron-Iron carbide phase diagram, influence of alloying elements.

Polymers:Introduction, various polymer materials, molecular weight distribution, synthesis, properties, crystalline polymer, amorphous polymers, applications, models for various polymers.

Properties of Materials:Electrical properties, thermal properties, magnetic properties, optical properties, mechanical properties.
Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: II
SEMESTER: 2
COURSE CODE: PHYS 2166
COURSE TITLE: TECHNOLOGICAL MATERIALS
NO. OF CREDITS: 3
PREREQUISITES: PHYS 2165
COURSE DESCRIPTION: Earth Materials: Raw Materials, metals and their ores, importance of these materials, basic building blocks of earth materials, mineral chemistry, metal chemistry, glasses, ion conducting glasses, crystal structures, effect of temperature, pressure and environment on these minerals and metals

Material Extraction Processes: Importance of extraction, principles of extraction, crushing of ores, separation of ores: gravity separation, magnetic separation, froth floatation process, leeching, calcination, roasting, reduction of free metal: smelting, reduction of aluminium, self-reduction process, electrolytic reduction, cyanide method, refining/purification; liquation, distillation, poling, zone refining, Mond's process, Van Arkel process.

Characterization: Structure of metals and minerals, methods to determine structure, metallography, X-ray diffraction, scanning electron microscopy, transmission electron microscopy, phase diagrams, electrical properties and their variations with phases, physical property determination.
Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: III
SEMESTER: 1
COURSE CODE: PHYS 3150
COURSE TITLE: ELECTROMAGNETISM
NO. OF CREDITS: 3
PREREQUISITES: PHYS 2150
COURSE DESCRIPTION:

Electromagnetic Theory

- The electric field: Coulomb's law. Discrete and continuous charge distributions. Divergence and curl of electrostatic fields.
- The electric potential: The potential of a localized charge distribution. Work and energy in electrostatics.
- Electric fields in matter: Polarization. The electric displacement and linear dielectrics.
- The magnetic field: The magnetic field, magnetic forces and currents. The Biot-Savart law. The magnetic field of a steady current. The divergence and curl of magnetic fields.
- Magnetic fields in matter: Magnetization. Response of materials to magnetic fields. The magnetic field inside matter. Ampere's law in magnetized materials
- Electrodynamics: Electromotive force and electromagnetic induction. Maxwell's equations and the displacement current in vacuum and in matter.
- Electromagnetic waves: The wave equation for E and B. Electromagnetic waves in a vacuum. Electromagnetic waves in conductors and dielectrics.

Applications of Electromagnetism:

- Waveguides: The rectangular waveguide. Transverse electric modes (TE) and transverse magnetic modes (TM). Propagation characteristics of rectangular waveguides.
- Antennas: Introduction to types of antennas. Antenna parameters in terms of the time-averaged Poynting vector.

Assessment:

Coursework	40%
Final Examination (one 2-hr paper)	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: PHYS 3151
COURSE TITLE: QUANTUM MECHANICS
NO. OF CREDITS: 3
PREREQUISITES: PHYS 2150
COURSE DESCRIPTION:

- The origins of quantum physics: Review of Blackbody radiation, the Photoelectric effect and the Compton Effect. Wave properties of material particles and electron diffraction. The Bohr atom.
- The Schrödinger equation: Wave-particle duality: radiation as particles and electrons as waves. Development of a wave equation for a free particle and for a particle moving in a potential. The time-dependent and time-independent Schrödinger equations. The wave function and Born's probability interpretation of the wave function. Heisenberg's Uncertainty Principle. The momentum and energy operators.
- One-dimensional problems: The free particle. Solutions to the Schrödinger equation for the infinite potential well. Stationary states of the infinite well. The potential barrier and quantum tunnelling. The harmonic oscillator. Applications.
- Three-dimensional problems: Wave functions of the infinite cubical well. Degeneracy of the energy levels. Wave functions of the hydrogen atom and degeneracy of the spectrum.
- Eigenfunctions, eigenvalues and operators: The eigenfunctions, eigenvalues and Hamiltonian operator of the Schrödinger equation. Normalization and completeness of the eigenfunctions. . Eigenvalues and measurement. The superposition principle and generalized time-dependent wave functions. Properties of wave functions.Expectation values of position and momentum.
- Orbital and spin angular momentum: Representation of orbital angular momentum in quantum mechanics. Eigenfunctions of $L^2$and L_z. Orbital magnetic moment in terms of orbital angular momentum.The Stern-Gerlack experiment and the spin hypothesis. Theory of spin 1/2 and the Pauli matrices. Spin magnetic moment of the electron in terms of spin angular momentum. Applications.

Assessment:

Coursework	40%
Final Examination (one 2-hr paper)	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: PHYS 3152
COURSE TITLE: ADVANCED THERMODYNAMICS AND SOLID STATE PHYSICS
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 AND PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION:
Thermodynamics: Heat, Work, First and Second Laws of Thermodynamics – Applications: engines, refrigerators, Entropy, Maxwell's relations, Joule-Thomson effect, Thermodynamic potentials, Magneto-thermal relations, Thermodynamic applications.
Solid State Physics: Structure of solids, elementary crystallography and crystal diffraction, free electron theory of metals, energy band theory, semiconductors, superconductivity.
Assessment:

Coursework	40%
Final Examination (one 2-hr paper)	60%

LEVEL: III
SEMESTER: 1 & 2
COURSE CODE: PHYS 3153
COURSE TITLE: PHYSICS MAJOR RESEARCH PROJECT
NO. OF CREDITS: 3
PREREQUISITES: AVAILABLE ONLY TO PHYSICS MAJORS
COURSE DESCRIPTION: Students will be required to complete a 12 weeks research project for completion of their Major in Physics. Projects will be offered in the various disciplines of Physics and each Project will be assigned a Project Supervisor. Projects may involve pure research study toward a fundamental aspect of Physics or address more applied issues. It may involve field or laboratory based work or may be a desk study involving data analysis or interrogation of legal documents. The project should, however, give the student a chance to further develop skills from the toolbox and a more detailed understanding of some component of the course. This course is offered in both Semester I & II
Assessment:

Oral	20%
Report	80%

1. Only students who need **not more than 30 credits to graduate** will be assigned a project.
2. This course will run in both semesters 1 and 2.

LEVEL: III
SEMESTER: 1
COURSE CODE: PHYS 3156
COURSETITLE: PRINCIPLES OF PHYSICAL OCEANOGRAPHY AND GEOHYDROLOGY
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Introduction to Physical Oceanography: Instruments and Measurements, Remote Sensing, Characteristics of sea water, Principles of fluid dynamics, Application to ocean circulation, Surface and deep water currents, Waves and wave generation, Tides, Coastal oceanography, Uses and problems of the oceans. Introduction to Geohydrology: Water bearing formations, Groundwater flow, Darcy's law, Equation of continuity, Laplace equation, Well hydraulics, Aquifer, Characteristics, Storage and transmissivity, Saline intrusion in coastal aquifers.
Assessment:

Coursework	40%
Final Examination (One 2-hour paper)	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: PHYS 3157
COURSE TITLE: EARTH SCIENCE
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Earth processes and Caribbean Stratigraphy: Properties of minerals and crystals; composition, occurrence, distribution, classification and field recognition of igneous, sedimentary and metamorphic rocks; tectonic and structural features of the earth; volcanic activity; formation of soils and sediments; stratigraphy and geologic time; plate tectonics. The Caribbean environment in relation to: man, water supply, soils, petroleum, engineering geology and minerals.
Introduction to Earth Materials: the origin, occurrence, world distribution and development of major earth resources- metalliferrous and non-metal ores, petroleum, coal building materials, chemical raw materials, biomass resources.
Earth seismology: the nature of earthquakes; the propagation and detection of seismic wave; geographical distribution of earthquakes; surface effects of earthquakes, earthquake history of the Caribbean.
Assessment:

Coursework	40%
Final Examination (One 2-hour paper)	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: PHYS 3158
COURSE TITLE: FUNDAMENTALS OF RENEWABLE ENERGY
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Introduction to current sources of Energy and World's Oil production; Renewable Energy requirements, types and effects; Renewable Energy Technologies; Conservation, conversion and efficiency; applications and evaluation of renewable energy systems - solar energy, biomass, wind energy, geothermal energy and hydropower.
Assessment:

Coursework	40%
Final Examination (One 2-hour paper)	60%

LEVEL: III
SEMESTER: YEAR-LONG
COURSE CODE: PHYS 3159
COURSE TITLE: ENVIRONMENTAL PHYSICS LABORATORY
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215, and PHYS 1216
COURSE DESCRIPTION: Laboratory experiments and a field trip with site work are to be performed corresponding to the taught components of the Environmental Physics Minor. The students will be expected to perform the exercises and collect their data and depending on the complexity of the exercise will submit the written report at the end of the exercise or submit it the following week for assessment.
Assessment:
Coursework: 100%
The students will be required to submit the lab report for each of the experiment they will perform. Each lab will be marked and this will constitute the coursework.

LEVEL: III
SEMESTER: YEAR-LONG
COURSE CODE: PHYS 3160
COURSE TITLE: MEDICAL PHYSICS & BIOENGINEERING LABORATORY
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Laboratory experiments and a field trip with site work are to be performed corresponding to the taught components of the Medical Physics & Bioengineering elective. The students will be expected to perform the exercises and collect their data and depending on the complexity of the exercise will submit the written report at the end of the exercise or submit it the following week for assessment.
Assessment:
Coursework: 100%
The students will be required to submit the lab report for each of the experiment they will perform. Each lab will be marked and this will constitute the coursework.

LEVEL: III
SEMESTER: 1
COURSE CODE: PHYS 3161
COURSE TITLE: ANALOG ELECTRONICS II
NO. OF CREDITS: 3
PREREQUISITES: PHYS 2282 or PHYS 2163
COURSE DESCRIPTION: The course is updated regularly. Any amendments will be given to students at the start of the course.

- Circuit Theory: voltage and current sources, dc/ac analysis applying Kirchoff's voltage law, Kirchoff's current law, Ohm's law, Thevenin theorem, Norton theorem, superposition theorem, branch current and mesh current analysis.
- Semiconductors: conductors, insulators, semiconductors. Intrinsic, extrinsic, energy band diagrams
- Semiconductor diodes: Theory, biasing, I/V characteristic and approximations, characteristic equation, resistance, load line analysis, applications.
- Bipolar Junction Transistor: Theory, biasing, I/V input and output characteristics, amplifier configurations, bias circuits, load lines, dc and ac analysis, Hybrid equivalent model, small signal analysis, Frequency response, applications.
- Power amplifiers: Theory and examples of various classes of amplifiers such as A, B, AB, C, D, applications.
- Feedback amplifiers: Positive and negative feedback. General single-loop feedback amplifier and theory. Advantages and disadvantages of negative feedback, feedback amplifier types, applications.
- Power supplies: transformers, rectifiers, filters, regulators, configurations.

Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: PHYS 3162
COURSE TITLE: DIGITAL ELECTRONICS II
NO. OF CREDITS: 3
PREREQUISITES: PHYS 2162
COURSE DESCRIPTION: Combinational Circuits: adders, subtractors, multiplexers, de-multiplexers, encoder, decoders; Sequential Circuits: Registers, counters; Memories: Types, memory organization (RAM and ROM), memory cells; A/D and D/A Conversion: Sample and hold technique, digital-to-analog and analog-to-digital converters; Microprocessor: Microprocessor evolution and its types, microprocessor based system and its operation, overview of microprocessor architecture, addressing modes, programming of microprocessor, instructions set; Digital System Design: Programmable Logic Devices (PLDs), digital system design process, various EDA tools, Field Programmable Gate Array (FPGA) based system design approach.

Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: III
SEMESTER: YEAR-LONG
COURSE CODE: PHYS 3163
COURSE TITLE: ELECTRONICS LABORATORY
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Laboratory experiments and a field trip with site work are to be performed corresponding to the taught components of the Medical Physics & Bioengineering elective. The students will be expected to perform the exercises and collect their data and depending on the complexity of the exercise will submit the written report at the end of the exercise or submit it the following week for assessment.

Assessment:
Coursework: 100%
The students will be required to submit the lab report for each of the experiment they will perform. Each lab will be marked and this will constitute the coursework.

LEVEL: III
SEMESTER: 1
COURSE CODE: PHYS 3164
COURSETITLE: CERAMICS SCIENCE
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Definition and classification of ceramics; typical properties; engineering/industrial applications based on properties; crystal structure; raw materials; fabrication and processing; mechanical, thermal, electrical and magnetic properties; glasses; cement and concrete.
Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: III
SEMESTER: 2
COURSE CODE: PHYS 3165
COURSE TITLE: MATERIALS SCIENCE II
NO. OF CREDITS: 3
PREREQUISITES: PHYS 2165
COURSE DESCRIPTION: Iron and Steel: Raw Materials, Iron ore, purification processes, steel, steel making, blast furnace, electric arc furnace, types of steels and applications, processing of steels, forging, dye formation, extrusion, rolling, heat treatment. Steel phase diagram, isothermal phase transformations, cooling curves, properties and effect of impurities

Testing of the Materials: Destructive Testing: Brinell's test, Rockwell test, Vicker's test (macro and micro), knoop test (micro), izod and charpy tests. Non Destructive Testing: Visual, liquid penetration, eddy current, electric current perturbation, magnetic particle, ultrasonic testing, microwave testing, holography.

Microstructure of Polymers: Introduction to polymers, polymerization processes, crystallinity and amorphicity in polymers, microstructure of polymers, architecture, crystallization, mechanical and other properties of polymers, viscoelasticity, elastic after effect, stress relaxation, models for viscoelasticity and stress relaxation, dynamic response.

Composites: Introduction, different types of composites (particle reinforced, fiber reinforced, structural composites), microstructure of ceramics, mechanical and other properties of ceramics.
Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: III
SEMESTER: YEAR-LONG
COURSE CODE: PHYS 3166
COURSE TITLE: MATERIALS SCIENCE LABORATORY
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111, or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 121 and PHYS 1216
COURSE DESCRIPTION: Laboratory experiments and a field trip with site work are to be performed corresponding to the taught components of the Materials Science Minor. The students will be expected to perform the exercises and collect their data and depending on the complexity of the exercise will submit the written report at the end of the exercise or submit it the following week for assessment.
Assessment:
Coursework: 100%
The students will be required to submit the lab report for each of the experiment they will perform. Each lab will be marked and this will constitute the coursework.

LEVEL: III
SEMESTER: 2
COURSE CODE: PHYS 3167
COURSE TITLE: RADIATION BIOPHYSICS AND MEDICINE
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION:
Introduction to cell biology and DNA: this part of the course addresses cell structure, division and functioning, DNA as the main target for radiation, genetics, functioning of cell and damages caused by different types of radiation.

Radiation damage and DNA repair. Cell death and mutation. Organ, tissue and organism effects of irradiation: This part of course addresses cell survival after irradiation and different biological and chemical mechanisms affecting the survival as well as DNA damage and repair. Tissue, organs and organism, effects of irradiation. Here the key knowledge of radiation effects is learned.

Modern methods of radiotherapy: This part of course addresses the main principles, modern methods of radiotherapy and combined therapies as well as tumor biology and responses of tumor and of normal tissues to radiation.

Radiation Carcinogenesis: This part of course addresses the development of cancer after radiation: type of malignancy, dosage, time responses and concepts of for risk estimations.

Radiation protection and legislation: This part of course addresses radiation accidents, radioecology, risk estimation and current legislation in radiation (International and Local). What we have learned after certain accidents and how to avoid high radiation doses or to minimize the consequences of irradiation.
Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: III
SEMESTER: I
COURSE CODE: PHYS 3168
COURSE TITLE: MEDICAL INSTRUMENTATION
NO. OF CREDITS: 3
PREREQUISITES: PHYS 1110 and PHYS 1111 or any nine credits from PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 and PHYS 1216
COURSE DESCRIPTION: Electronic Instruments: voltmeters e.g. VTVM Transistor voltmeter, multimeter, use of cathode-ray oscilloscope for the measurement of voltage, current phase and frequency, special purpose oscilloscopes, measurement of resistance, inductance, capacitance, using Kelvin's, Maxwell's and Schering bridge, measurement of effective resistance at high frequency, R meter, LCR meter. Signal generators, function generator, wave analyzer, harmonic distortion analyzer, spectrum analyzer, spectrum analysis.
Transducers: operation of strain gauge, electromechanical transducer e.g. Linear Variable Differential Transformer (LVDT), thermocouple, piezo- electric crystal, photoelectric transducers, light detecting resistor (LDR), SQUID, thermistors. Digital-to-analog and analog-to-digital conversion techniques.
Data Acquisition System for patient monitoring: recording equipment: types e.g. graphic, strip chart, magnetic tape, digital tape and requirements. Safety issues: Macro and micro current shock, special design from safety consideration, safety standards, testing, ensuring protection of equipment and personnel.
Assessment:

Coursework	40%
Final Examination (One 2-hr paper)	60%

LEVEL: I
SEMESTERS: 1 & 2
COURSE CODE: SPAN 1101
COURSE TITLE: LEVEL 1A SPANISH
NUMBER OF CREDITS: 2
PREREQUISITES: NONE
COURSE DESCRIPTION: This is a beginners' course for students with no previous knowledge of Spanish. This communicative course focuses on the development of the four skills: listening, speaking, reading and writing as well as on the development of knowledge of the Hispanic culture. The course meets for four hours per week for 13 weeks. In addition, class contact time should be supplemented by one hour of independent study for each contact hour.
Assessment:
In-course testing: 100%:
40% [mid-semester];
40% [end of semester];
20% [two assignments]

LEVEL: I
SEMESTERS: 1 & 2
COURSE CODE: SPAN 1102
COURSE TITLE: LEVEL 1B SPANISH
NUMBER OF CREDITS: 2
PREREQUISITES: SPAN 1101/1A SPANISH OR EQUIVALENT
COURSE DESCRIPTION: Students in this course have some basic knowledge of Spanish. This course will build on the skils learnt in SPAN 1101/!A Spanish and aims to continue to promote communicative and intercultural competence. The focus will be on the development of the four skills: speaking, listening, reading and writing. The course meets for four hours per week for 13 weeks. In addition, class contact time should be supplemented by one hour of independent study for each contact hour.
Assessment:
In-course testing: 100%:
40% [mid-semester];
40% [end of semester];
20% [two assignments]

APPENDIX 1 - PRE-REQUISITES FOR CROSS FACULTY COURSES

BANNER CODE	TITLE	FSS PREREQUISITES	FST B.SC. ACTUARIAL SCIENCE PREREQUISITES	FST B.SC. CHEMISTRY & MANAGEMENT PREREQUISITES	FST B.SC. COMPUTER SCIENCE & MANAGEMENT PREREQUISITES
ACCT 1002	Introduction to Financial Accounting	**NONE**	**NONE**	**NONE**	**NONE**
ACCT 1003	Introduction to Cost and Managerial Accounting	**NONE**	**NONE**	**NONE**	**NONE**
ACCT 2017	Management Accounting	ACCT 1002 and ACCT 1003		This course is NOT offered to these students	ACCT 1002 and ACCT 1003
ECON 1001	Introduction to Economics I	**NONE**	**NONE**	**NONE**	**NONE**
ECON 1002	Introduction to Economics II	**NONE**	**NONE**	This course is Not offered to these students	**NONE**
ECON 1005	Introduction to Statistics	**NONE**	This course is NOT offered to these students	**NONE**	This course is NOT offered to these students
MGMT 2003	Principles of Marketing	ACCT 1002 and ECON 1001	ACCT 1002 and ECON 1001	ACCT 1002 and ECON 1001	ACCT 1002 and ECON 1001
MGMT 2006	Management Information Systems I	**NONE**	This course is NOT offered to these students	**NONE**	This course is NOT offered to these students
MGMT 2008	Organisational Behaviour	SOCI 1002 or MGMT 1001	This course is NOT offered to these students	MGMT 1001 OR SOCI 1002 OR AGEX 1000 OR CHEM 1060 OR CHEM 1065 AND CHEM 1066	MGMT 1001 OR SOCI 1002 OR AGEX 1000 OR COMP 1100
MGMT 2012	Quantitative Methods	ECON 1002 and ECON 1003	This course is NOT offered to these students	ECON 1002 and CHEM 1060	ECON 1002 and MATH 1140
MGMT 2021	Business Law	**NONE**	This course is NOT offered to these students	**NONE**	**NONE**
MGMT 2023	Financial Management I	ACCT 1002 and ECON 1003	ACCT 1002 and MATH 1140	ACCT 1002 and/or CHEM 1060	ACCT 1002 and MATH 1140

BANNER CODE	TITLE	FSS PREREQUISITES	FST B.SC. ACTUARIAL SCIENCE PREREQUISITES	FST B.SC. CHEMISTRY & MANAGEMENT PREREQUISITES	FST B.SC. COMPUTER SCIENCE & MANAGEMENT PREREQUISITES
MGMT 2032	Managerial Economics	ECON 1001 and ECON 1003	This course is NOT offered to these students	ECON 1001 and CHEM 1060	ECON 1001 and MATH 1140
MGMT 3017	Human Resource Management	MGMT 2008	This course is NOT offered to these students	MGMT 2008	This course is NOT offered to these students
MGMT 3048	Financial Management II	MGMT 2023 and MGMT 2032 OR ECON 2000 OR ECON 2001	MATH 2210	This course is NOT offered to these students	This course is NOT offered to these students
MGMT 3057	Production and Operation	MGMT 2012	This course is NOT offered to these students	MGMT 2012	This course is NOT offered to these students
MGMT 3060	Operations, Planning and Control	MGMT 3057	This course is NOT offered to these students	MGMT 3057	This course is NOT offered to these students
MKTG 3000	Marketing Management	MGMT 2003	This course is NOT offered to these students	MGMT 2003	MGMT 2003
MKTG 3007	Marketing Planning	MGMT 2003/MGMT 2012 and MGMT 2023	This course is NOT offered to these students	MGMT 2003. MGMT 2012 and MGMT 2023	This course is NOT offered to these students
SOCI 1002	Introduction to Sociology	**NONE**	This course is NOT offered to these students	**NONE**	This course is NOT offered to these students

APPENDIX 2 – APPROVED SCIENCE CAPE/GCE A-LEVEL SUBJECTS

- Applied Mathematics
- Biology
- Botany
- Chemistry
- Computer Science
- Environmental Science
- Further Mathematics
- Geography
- Geology
- Information Technology
- Mathematics
- Pure Mathematics
- Physics
- Zoology

APPENDIX 3 – UNIVERSITY REGULATIONS ON PLAGIARISM

Application of these Regulations

1 These Regulations apply to the presentation of work by a student for evaluation, whether or not for credit, but do not apply to invigilated written examinations.

Definition of plagiarism

2 In these Regulations, "plagiarism" means the unacknowledged and unjustified use of the words, ideas or creations of another, including unjustified unacknowledged quotation and unjustified unattributed borrowing;

"Level 1 plagiarism" means plagiarism which does not meet the definition of Level 2 plagiarism;

"Level 2 plagiarism" means plagiarism undertaken with the intention of passing off as original work by the plagiariser work done by another person or persons.

3 What may otherwise meet the definition of plagiarism may be justified for the purposes of Regulation 2 where the particular unacknowledged use of the words, ideas and creations of another is by the standards of the relevant academic discipline a function of part or all of the object of the work for evaluation whether or not for credit, for example:

a. The unacknowledged use is required for conformity with presentation standards;
b. The task set or undertaken is one of translation of the work of another into a different language or format;
c. The task set or undertaken requires producing a result by teamwork for joint credit regardless of the level of individual contribution;
d. The task set or undertaken requires extensive adaptation of models within a time period of such brevity as to exclude extensive attribution;
e. The task set or undertaken requires the use of an artificial language, such as is the case with computer programming, where the use of unoriginal verbal formulae is essential.

4 It is not a justification under Regulations 2 and 3 for the unacknowledged use of the words, ideas and creations of another that the user enjoys the right of use of those words, ideas and creations as a matter of intellectual property.

Other definitions

5 In these Regulations,
"Chairman" means the Chairman of the relevant Campus Committee on Examinations;
"Examination Regulations" means the Examination and other forms of Assessment Regulations for First Degrees Associate Degrees Diplomas and Certificates of the University;
"set of facts" means a fact or combination of facts.

Evidence of plagiarism

6 In order to constitute evidence of plagiarism under these Regulations, there shall be identified as a minimum the passage or passages in the student's work which are considered to have been plagiarised and the passage or passages from which the passages in the student's work are considered to have been taken.

Student Statement on Plagiarism

7 When a student submits for examination work under Regulation 1, the student shall sign a statement, in such form as the Campus Registrar may prescribe, that as far as possible the work submitted is free of plagiarism including unattributed quotation or paraphrase of the work of another except where justified under Regulation 3.

8 Quotation or paraphrase is attributed for the purpose of Regulation 7 if the writer has indicated using conventions appropriate to the discipline that the work is not the writer's own.

9 The University is not prohibited from proceeding with a charge of plagiarism where there is no statement as prescribed under Regulation 7.

Electronic vetting for plagiarism

10 The results of any electronic vetting although capable, where the requirements of Regulation 7 are satisfied, of constituting evidence under these Regulations, are not thereby conclusive of any question as to whether or not plagiarism exists.

Level 1 plagiarism

11 In work submitted for examination where the Examiner is satisfied that Level 1 plagiarism has been committed, he/she shall penalise the student by reducing the mark which would have otherwise been awarded taking into account any relevant Faculty regulations.

Level 2 plagiarism

12 Where an examiner has evidence of Level 2 plagiarism in the material being examined, that examiner shall report it to the Head of Department or the Dean and may at any time provide the Registrar with a copy of that report. In cases where the examiner and the Dean are one and the same, the report shall be referred to the Head of the Department and also to the Campus Registrar.

13 Where any other person who in the course of duty sees material being examined which he or she believes is evidence of Level 2 plagiarism that other person may report it to the Head of Department or the Dean and may at any time report it to the Campus Registrar who shall take such action as may be appropriate.

14 Where a Dean or Head of Department receives a report either under Regulation 12 or 13, the Dean or Head of Department, as the case may be, shall

a. where in concurrence with the report's identification of evidence of Level 2 plagiarism, report the matter to the Campus Registrar; or
b. where not concurring in the identification of evidence of plagiarism, reply to the examiner declining to proceed further on the report; or
c. where concluding that there is evidence of Level 1 plagiarism, reply to the examiner indicating that conclusion and the Examiner shall proceed as under Regulation 11.

15 Where a report is made to the Campus Registrar under Regulation 14a or 16, the Campus Registrar shall lay a charge and refer the matter to the Campus Committee on Examinations.

16 Where the Campus Registrar receives a report alleging Level 2 plagiarism from the Examiner or any other person except the Dean or Head of Department, the Campus Registrar shall refer the matter to a senior academic to determine whether there is sufficient evidence to ground a charge of plagiarism and where such evidence is found, the Campus Registrar shall proceed as under Regulation 15.

17 Where the matter has been referred to the Campus Committee on Examinations pursuant to Regulation 15, the proceedings under these Regulations prevail, over any other disciplinary proceedings within the University initiated against the student based on the same facts and, without prejudice to Regulation 21, any other such disciplinary proceedings shall be stayed, subject to being reopened.

18 If the Campus Committee on Examinations is satisfied, after holding a hearing, that the student has committed Level 2 plagiarism, it shall in making a determination on the severity of the penalty take into consideration:

a. the circumstances of the particular case;
b. the seniority of the student; and
c. whether this is the first or a repeated incidence of Level 2 plagiarism.

19 Where the Campus Committee is of the view that the appropriate penalty for an offence of Level 2 plagiarism is for the student to be:

(i) awarded a fail mark;
(ii) excluded from some or all further examinations of the University for such period as it may determine;
(iii) be dismissed from the University,

it shall make such recommendation to the Academic Board.

Clearance on a charge of Level 2 plagiarism

20 A determination of the Campus Committee on Examinations that Level 2 plagiarism has not been found will be reported to the Campus Registrar who shall refer it to the Examiner and notify the student. Where the Committee has not identified Level 2 but has identified Level 1, it shall be reported to the Campus Registrar who shall refer it to the examiner.

Level 2 plagiarism: Appeal to the Senate

21 A student may appeal to the Senate from any decision against him or her on a charge of plagiarism made by Academic Board.

Delegation by Dean or Head of Department

22 The Dean or Head of Department, as the case may be, may generally or in a particular instance delegate that officer's functions under these Regulations.

Conflict of interest disqualification

23 Any person who has at any time been an examiner of work or been involved in procedures for laying charges in relation to which an issue of plagiarism is being considered under these Regulations shall withdraw from performing any functions under these Regulations other than those of supervisor and examiner.

PLAGIARISM DECLARATION

THE UNIVERSITY OF THE WEST INDIES
The Office of the Board for Undergraduate Studies
INDIVIDUAL PLAGIARISM DECLARATION

STUDENT ID:

COURSE TITLE:

COURSE CODE:

TITLE OF ASSIGNMENT:

This declaration is being made in accordance with the **University Regulations on Plagiarism (First Degrees, Diplomas and Certificates**) and must be attached to all work, submitted by a student to be assessed in partial or complete fulfilment of the course requirement(s), other than work submitted in an invigilated examination.

STATEMENT

1. I have read the Plagiarism Regulations as set out in the Faculty or Open Campus Student Handbook and on University websites related to the submission of coursework for assessment.

2. I declare that I understand that plagiarism is a serious academic offence for which the University may impose severe penalties.

3. I declare that the submitted work indicated above is my own work, except where duly acknowledged and referenced and does not contain any plagiarized material.

4. I also declare that this work has not been previously submitted for credit either in its entirety or in part within the UWI or elsewhere. Where work was previously submitted, permission has been granted by my Supervisor/Lecturer/Instructor as reflected by the attached Accountability Statement.

5. I understand that I may be required to submit the work In electronic form and accept that the University may subject the work to a computer-based similarity detention service.

NAME _____

SIGNATURE _____

DATE _____

GROUP PLAGIARISM DECLARATION

COURSE TITLE:

COURSE CODE:

TITLE OF ASSIGNMENT:

When submitting a group assignment for assessment each member of the group will be required to sign the following declaration of ownership which will appear on the coursework submission sheet.

We the undersigned declare that:

1. We have read the Plagiarism Regulations as set out in the Faculty or Open Campus Student Handbook and on University websites related to the submission of coursework for assessment.

2. We declare that I understand that plagiarism is a serious academic offence for which the University may impose severe penalties.

3. The submitted work indicated above is our own work, except where duly acknowledged and referenced.

4. This work has not been previously submitted for credit either in its entirety or in part within the UWI or elsewhere. Where work was previously submitted, permission has been granted by our Supervisor/Lecturer/Instructor as reflected by the attached Accountability Statement.

5. We understand that we may be required to submit the work In electronic form and accept that the University may check the originality of the work using a computer-based similarity detention service.

NAME _____

SIGNATURE _____

NAME _____

SIGNATURE _____

NAME _____

SIGNATURE _____

DATE _____

UWI

ST. AUGUSTINE
CAMPUS

ADDITIONAL ACCOUNTABILITY STATEMENT WHERE WORK HAS BEEN PREVIOUSLY SUBMITTED

1. I/We have set out in an attached statement the details regarding the circumstances under which this paper or parts thereof has been previously submitted.

2. I/We have received written permission from my Supervisor/Lecturer/Instructor regarding the submission of this paper and I have attached a copy of that written permission to this statement.

3. I/We hereby declare that the submission of this paper is in keeping with the permission granted.

NAME _____

SIGNATURE _____

DATE _____

APPENDIX 4 – LIST OF ANTI-REQUISITES

BIOL 1061	BIOL 1362 or BIOL 1364 or AGRI 1011 or AGRI 1013
BIOL 1065	BIOL 1262 or BIOL 1263
BIOL 1261	BIOL 1065 or BIOL 1262 or BIOL 1263 or AGRI 1012
BIOL 1362	AGRI 1013
BIOL 1364	AGRI 1011
BIOL 2263	BIOL 2261
BIOL 2361	BIOL 2365
BIOL 2363	HUEC 2000 OR BIOL 2361
BIOL 2761	AGRI 1016
BIOL 3264	BIOL 2861
BIOL 3761	BIOL 3765
CHEM 1062	CHEM 1060 or CHEM 1061 or CHEM 0060 or CHEM 0061
CHEM 1060	CHEM 1065 or CHEM 1066 or CHEM 1067 or CHEM 1068
CHEM 1061	CHEM 1065 or CHEM 1066 or CHEM 1067 or CHEM 1068
COMP 1100	INFO 1420
COMP 1200	INFO 2420
COMP 1400	COMP 1100
COMP 1401	INFO 1425
COMP 1402	COMP 1300 or MATH 1140
COMP 1403	INFO 1405
COMP 1404	COMP 1200
COMP 1405	COMP 1200
COMP 1406	COMP 1350 or MATH 1150
COMP 2000	INFO 2410
COMP 2100	INFO 2405

COMP 2200	INFO 2425
COMP 2300	INFO 2430
COMP 2400	INFO 2400
COMP 2700	INFO 2415
COMP 3750	INFO 3430
COMP 3990	INFO 3490
INFO 1500	INFO 1400
INFO 1501	INFO 1405
INFO 1503	INFO 1415
INFO 1504	INFO 1420 or COMP 1100
INFO 1505	INFO 1410
MATH 1115	AGRI 1003
MATH 1140	INFO 1415 or MATH 1141 or MATH II52
MATH 1150	MATH 1142 or MATH 1151
MATH 1152	COMP 1402 or COMP 1503
MATH 2110	ECON 2015
MATH 2120	ECON 2016
MATH 2140	ECON 2006 or MATH 2190
MATH 2150	ECON 2006,MATH 2190 or MATH 3120
MATH 2190	ECON 2006 or MATH 2140 or MATH 2150
PHYS 1001	PHYS 2153 or PHYS 3383
PHYS 1110	PHYS 1211 or PHYS 1213 or PHYS 1216
PHYS 1111	PHYS 1211 or PHYS 1212
PHYS 2165	CHNG 1003
PHYS 3294	CHMG 1003