



UWI

ST. AUGUSTINE
CAMPUS

UNDERGRADUATE

INFORMATION GUIDE

FACULTY OF
SCIENCE &
TECHNOLOGY
REGULATIONS & SYLLABUSES

2012
2013

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**2012
2013**

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 will also offer programmes in exciting and important areas of technology such as Biotechnology, Environmental Technology, Information Technology, and Alternative Energy 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, Support and Development 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
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UNDERGRADUATE REGULATIONS & SYLLABUSES 2012 – 2013
THE FACULTY OF SCIENCE & TECHNOLOGY

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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 | iv. Computer Science and Management |
| ii. Chemistry and Management | v. Information Technology |
| iii. Computer Science | |

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

TABLE 1 - FACULTY OF SCIENCE AND TECHNOLOGY: MAJORS AND MINORS		
DISCIPLINE	MAJORS	MINORS
Biochemistry	Biochemistry	Biochemistry
Biology	Biology	Biology Biotechnology Botany Environmental Biology Marine Biology Zoology
Chemistry	Chemistry	Chemistry Analytical Chemistry Applied Chemistry
Computer Science	Computer Science	Computer Science
(Multidisciplinary)	Environmental & Natural Resource Management	Environmental & Natural Resource Management
Mathematics	Mathematics	Mathematics Statistics Actuarial Science
Physics	Physics	Electronics Environmental Physics Materials Science Medical Physics & Bioengineering
<p>Note: For detailed information on special options/majors/minors, please refer to the relevant Departmental sections of this booklet.</p>		

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 - offered by the Office of Sport and Physical Education
- COCR 1002 - Debating - offered by Student Advisory Services
- COCR 1003 - Leadership and/or Service - offered by Student Advisory Services
- COCR 1012 - Workplace Protocol for Students Programme - offered by the Faculty of Social Sciences

Professional Microsoft Office - offered by Campus IT Services (CITS) in conjunction with the FST

- COCR 1025 - Microsoft Office Word 2010
- COCR 1026 - Microsoft Office Excel 2010
- COCR 1027 - Microsoft Office PowerPoint 2010
- COCR 1028 - Microsoft Office Outlook 2010
- COCR 1029 - Microsoft Office Access 2010

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.

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Faculty courses	All courses except Foundation and Co-curricular courses	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.
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.	Preliminary Course	A Level 0 course used to satisfy entry requirements but does not contribute towards the requirements for the award of the degree.
Major	A specified number of credits (normally 30-33) including prescribed courses from Level II & III from a single discipline (see Departmental course listing).	Remedial Course	A course that is offered in Summer School only for students who have failed this course during the semester.
Marginal failure	35% to 39% in the overall examination.	Science Faculties	The Faculties of Science and Technology.
Minor	A specified number of credits (normally 15 or 16) including prescribed courses from Levels II & III from a single discipline	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).
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 than the Faculty of Science and Technology	Subject	An area of study traditionally assigned to the purview of a department.
Part	Portion of a programme defined by the regulations governing the programme.	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.
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.	Full-time Student	A full-time student will normally be expected to register for 12 to 15 credits per semester.
Pre-requisite	A course which must be passed before the course for which it is required may be pursued.	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	An exchange programme which allows students to spend one or two semesters at universities Exchange 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:

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)

TABLE 2 : CAPE (GCE A-LEVEL OR EQUIVALENT) QUALIFICATION FOR ENTRY INTO VARIOUS FST PROGRAMMES*

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
• Environmental & Natural Resource Management	Two (2) science subjects - (Minimum Average Grade III) and CSEC Biology or equivalent
• Mathematics	Two (2) subjects including Mathematics
• Physics	Two (2) subjects including Physics OR Mathematics with CSEC Physics or equivalent,
• BSc Actuarial Science	Two (2) subjects including Mathematics (Minimum Grade II)
• 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 Information Technology	Two (2) subjects including one (1) science subject

For a list of approved science CAPE/GCE A-Level subjects, see Appendix 2.

- (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 or as 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 to 12 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** courses 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-lo
e-mail: 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% at 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

TABLE 3: CREDIT REQUIREMENT FOR THE VARIOUS DEGREES

DEGREE	LEVEL I CREDITS	LEVEL II - III CREDITS	FOUNDATION COURSES CREDITS	TOTAL
BSc (General) with majors/minors	24	60	9	93*
BSc (Options):				
BSc Actuarial Science	30	65	9	104
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 Information Technology	24	60	9	93
<i>*NB: This is the MINIMUM REQUIREMENT and may vary depending upon the credit requirements for the major/minor you are pursuing</i>				

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.
- (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 would 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 ONLINE 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 LEVELS 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.

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

SECTION V - REGULATIONS GOVERNING THE FST SUMMER SCHOOL PROGRAMME

The FST generally offers **remedial courses** 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) years 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, 2013
 - ii. 25% of tuition fees up to June 2, 2013 (up to the end the 1st week of teaching)
 - iii. 30% of tuition fees up to June 9, 2013 (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

THE bp TRINIDAD & TOBAGO LLC 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 2290

THE BERGER PAINTS TRINIDAD LTD. PRIZE

Awarded for the best Year II performance in Physics

THE DEVA SHARMA PRIZE

Awarded for the best performance in Modern Physics I

THE P.C.S. NITROGEN PRIZE

Awarded for the best Year II performance in Material Science

THE ANTHONY CAMPBELL MEMORIAL AWARD

Awarded for the best performance in the final year Research Project

THE TRINIDAD AGGREGATE PRODUCTS PRIZE

Awarded for the best performance in Ceramics

THE CARIRI PRIZE

Awarded for the best Year III performance in Material Science

THE BRUNO MITCHELL PRIZE

Awarded for the best performance in Optics & Astronomy Course

DIAGNOSTIC NUCLEAR MEDICINE LTD. PRIZE

Awarded to the most outstanding student In Further Medical Physics

SECTION VII - PROGRAMME OUTLINES DEPARTMENT OF CHEMISTRY

List of Courses Offered in the Department of Chemistry
for the 2012/2013 academic year.

SEMESTER 1

Course Code	Course Title	Credits
CHEM 0060	Preliminary Chemistry I	0
CHEM1060	Introductory Chemistry I (Remedial Only)	6
CHEM1061	Introductory Chemistry II (Remedial Only)	6
CHEM 1065	Introduction to Chemistry Laboratory	3
CHEM 1066	Introduction to Chemistry I	3
CHEM 1062	Basic Chemistry for Life Sciences	3
CHEM 2160	Main Group Chemistry	4
CHEM 2360	Basic Physical Chemistry	4
CHEM 2025	Kinetics & Mechanism	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

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	4
CHEM 2260	Basic Organic Chemistry I	4
CHEM 2460	Principles of Chemical Analysis	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

Please note:

- I. Preliminary Chemistry I (CHEM 0060) and II (CHEM 0061) are taught by The Open Campus (formerly the School of Continuing Studies). These courses are not counted towards a student's credit requirements for the BSc degree. However these courses 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 and the Life Sciences.
b. **However CHEM 1062 cannot be done in conjunction with CHEM 1060 and/or CHEM1061 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. Students entering in the academic year 2012/13 will be required to pursue four (4) Level I courses: CHEM1065, CHEM1066, CHEM1067 and CHEM1068 (3 credits each) - see listing above. These courses have replaced the two (2) Level I courses CHEM1060 and CHEM1061 (6 credits each).
- VI. Students repeating CHEM1060 (Introductory Chemistry I) or CHEM1061 (Introductory Chemistry II) which are no longer being taught can register during the registration period for either one of these courses. Any student who has also failed the lab component of either one of these courses must notify the Head of Department. Students who have failed CHEM1060 and CHEM1061 will be required to register for the new Level I courses: CHEM1065, CHEM1066, CHEM1067 and CHEM1068 (see listing above).

VII. Chemistry majors will be required to pursue a Final Year Research Project course (96 hours) - in either Semester 1 or 2.

VIII. The courses CHEM3560 (Environmental Chemistry) and CHEM3569 (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.

Major in Chemistry (33 CREDITS)

COURSE LISTING

PREREQUISITE LEVEL I COURSES

LEVEL I

SEMESTER 1

Course Code	Course Title	Credits
CHEM 1060	Introductory Chemistry I (Remedial Only)	6
CHEM 1061	Introductory Chemistry II (Remedial Only)	6

OR

CHEM 1065	Introduction to Chemistry Laboratory	3
CHEM 1066	Introduction to Chemistry I	3

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	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** alternatively 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 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

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

(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	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

(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 CONJUNCTION 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

(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 CONJUNCTION 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

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 (FOR STUDENTS UNDER THE OLD SYSTEM)

(a) LEVEL I

SEMESTER 1

Course Code	Course Title	Credits
ACCT 1002	Introduction to Financial Accounting	3
CHEM 1060	Introductory Chemistry I (Remedial)	6
CHEM 1061	Introductory Chemistry II (Remedial)	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

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

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**(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	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 previous 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	
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 2012/2013 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.

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 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
COMP 3990	Project (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

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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 3400	Fundamentals of Operating Systems *	4
INFO 3405	Networking Technologies *	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
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 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 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
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 1502	Introduction to Problem Solving	3
INFO 1503	Introduction to Mathematics for Critical Thinking	3
INFO 1504	Introduction to Programming Fundamentals I	3
INFO 1507	Introduction to Business Principles	3
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

**COURSES NOT OFFERED IN ACADEMIC
YEAR 2012/2013**

Course Code	Course Title	Credits
COMP 1100	Computer Programming I	6
COMP 1200	Computer Programming II	6
COMP 1300	Mathematics for Computer Science I	6
COMP 1350	Mathematics for Computer Science II	6
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 3900	Special Topics in Computer Science	4
INFO 1400	Information Technology Fundamentals	6
INFO1405	Programming for the WWW	6
INFO1410	Information Processing Systems	6
INFO1415	Mathematics for Critical Thinking	6
INFO1420	Programming Fundamentals I	6
INFO 1425	Introduction to Computer Science	6
INFO 2500	Networking Technologies Fundamentals	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

SEMESTER 2

Course Code	Course Title	Credits
COMP 1404	Programming II	3
COMP 1405	Programming III	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 3990	Project (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 3550	Internet Technologies II	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

SEMESTER 2

Course Code	Course Title	Credits
COMP 1404	Programming II	3
COMP 1405	Programming III	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

BSc Information Technology

(ALSO OFFERED UNDER THE EVENING UNIVERSITY PROGRAMME)
(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

SEMESTER 3 (EVENING UNIVERSITY PROGRAMME)

Course Code	Course Title	Credits
INFO 1502	Introduction to Problem Solving	3
INFO 1503	Introduction to Mathematics for Critical Thinking	3
INFO 1504	Introduction to Programming Fundamentals I	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 2430	Business Information Systems	4
INFO 3400	Fundamentals of Operating Systems *	4
INFO 3405	Networking Technologies * (discontinued w.e.f.2013/2014)	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

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 3410	Web Systems and Technologies	4
INFO 3440	Software Engineering	4

ELECTIVE COURSES

Course Code	Course Title	Credits
INFO 2430	Business Information Systems	4
INFO 3425	Professional Ethics and Law	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)

The Level I courses in this programme were 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.

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
COMP1402	Computer Science Mathematics I	3
COMP1403	Introduction to Web Programming	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
COMP3990	Project (Game Programming)	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

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
INFO3400	Fundamentals of Operating Systems	4
INFO 3405	Networking Technologies <i>(discontinued w.e.f. 2013/2014)</i>	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
COMP 3220	Human Computer Interaction	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

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.

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
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 2012/2013 academic year.

NOTE

Students entering in 2012/2013 must meet a minimum 93-credit requirement to graduate; those entering before must meet the previous 101-credit requirement.

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 BIOL3068 or BIOL3069

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 2063	Marine Ecology	4
BIOL 2162	Advanced Genetics	4
BIOL 2263	General Microbiology	4
BIOL 2361	Biomolecules and Energy Metabolism	4
BIOL 2363	Metabolism	4
BIOL 2365	Comparative Biochemistry	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 3861	Animal Behaviour	4
BIOL 3863	Tropical Aquaculture	4
BIOL 3865	Animal Biotechnology	4
	<i>(Will not be offered in 2012/13)</i>	

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	6
	<i>(only for ENRM majors and repeaters)</i>	
BIOL 2062	Freshwater Biology	4
BIOL 2362	Further Metabolism and Gene Expression	4
BIOL 2364	Advanced General Biochemistry	4
BIOL 2761	Plant Physiology	4
BIOL 2862	Animal Physiology	4
BIOL 2864	Parasitism*	4
	<i>(Will not be offered in 2013/14)</i>	
BIOL 2866	Entomology*	4
	<i>(Will not be offered in 2012/13)</i>	
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 3764	Economic Botany	4
	<i>(Will not be offered in 2012/13)</i>	
BIOL 3864	Fisheries Biology and Management	4
GENS 3260	Gender and Science	4
	<i>(Will not be offered in 2012/13)</i>	

SEMESTER 3 (SUMMER)

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

MAJORS

The following majors are offered by the department:

- Biochemistry
- Biology
- Environmental & Natural Resource Management

Students pursuing a major may also elect to do any of the minors listed below. Note that common courses can only be counted once. **Students doing the major in ENRM are not permitted to do a minor in Environmental Biology.**

MINORS

- Biochemistry
- Biology
- Biotechnology
- Botany
- Environmental Biology
- Environmental & Natural Resource Management
- Marine 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 BIOL2365. Students should also chose an elective from the given Biochemistry electives to replace BIOL3061**

Students wishing to read BIOL2063 – 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

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	Genetics I	3

COURSE LISTING (WITH EFFECT FROM 2012/13)

PREREQUISITE COURSES

LEVEL I

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

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

CORE COURSES (28 CREDITS)

LEVEL II/III

SEMESTER 1

Course Code	Course Title	Credits
BIOL 2361	Biomolecules & Energy Metabolism	4
BIOL 2363	Metabolism	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

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	Genetics I	3
BIOL 1462	General Ecology and Biometry	6

COURSE LISTING (WITH EFFECT FROM 2012/13)

PREREQUISITE COURSES

LEVEL I

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/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
MATH1125	Fundamental Mathematics for the General Sciences II **	3

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

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

See note below (under Environmental and Natural Resources Management) for students taking joint majors in Biology and ENRM

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 3861	Animal Behaviour	4
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

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

- 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

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 BIOL2365*

Minor in Biochemistry

(16 CREDITS)

COURSE LISTING

CORE COURSES (8 CREDITS)

LEVEL II/III

SEMESTER 1

Course Code	Course Title	Credits
BIOL 2361	Biomolecules & Energy Metabolism	4
BIOL 2363	Metabolism	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

Minor in Biology

(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

Minor in Biotechnology

(15/16 CREDITS)

Any 15/16 credits from the following courses

COURSE LISTING

LEVEL II/III

SEMESTER 1

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

(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

(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

(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
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Minor in Zoology

(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 3861	Animal Behaviour	4
BIOL 3069	Research Project	4

LEVEL II/III

SEMESTER 2

Course Code	Course Title	Credits
BIOL 2862	Animal Physiology	4
BIOL 2864	Parasitism* (not offered in 2013/2014)	4
BIOL 2866	Entomology* (not offered in 2012/2013)	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

*offered in alternate years.

DEPARTMENT OF MATHEMATICS & STATISTICS

Please note:

Students reading courses in Mathematics in the Faculty of Science and Technology are advised to clear 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 **2012/2013** 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 2012/2013 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 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 Optimization4	4
MATH 2220	Introduction to Actuarial Mathematics	4
MATH 3240	Real Analysis	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 2012/2013

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	4
	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 2012/2013

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 2012/2013

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	4
	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	4
	Mathematics	4
MATH 3240	Real Analysis	4
MATH 3280	Introduction to Mathematical	4
	Modelling I	4
MATH 3290	Combinatorics	4
MATH 3320	Risk Theory	4
MATH 3321	Principles of Asset/Liability	4
	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 2012/2013

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
MGMT2023	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
MGMT3048	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

DEPARTMENT OF PHYSICS

The following list indicates courses to be taught in 2012/2013.

SEMESTER 1

Course Code	Course Title	Credits
PHYS 0070	Preliminary Physics I*	0
PHYS 1110	Introductory Physics I (Remedial Only)	6
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 2280	Mathematical Methods in Physics	4
PHYS 2281	Modern Physics I	4
PHYS 2290	Introduction to Medical Physics and Bioengineering	4
PHYS 2291	Digital Electronics	4
PHYS 2292	Meteorology, Climatology and Pollution <i>(to be offered in 2013/2014)</i>	4
PHYS 2294	Materials Science	4
PHYS 3382	Electronics and Control Theory	4
PHYS 3385	Electromagnetism Theory & Applications	4
PHYS 3387	Research Project	4
PHYS 3390	Further Medical Physics and Bioengineering <i>(to be offered in 2013/2014)</i>	4
PHYS 3392	Physical Oceanography and Geohydrology	4
PHYS 3396	Ceramics	4

SEMESTER 2

Course Code	Course Title	Credits
PHYS 0071	Preliminary Physics II*	0
PHYS 1111	Introductory Physics II <i>(Remedial Only)</i>	6
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 1001	Introduction to Astronomy	3
PHYS 2282	Circuit Theory and Electronics	4
PHYS 2283	Oscillation, Waves and Optics	4
PHYS 2293	Fundamentals of Geophysics <i>(to be offered in 2013/2014)</i>	4
PHYS 2295	Lasers and Solar Energy	4
PHYS 3381	Modern Physics II	4
PHYS 3383	Optics and Astronomy	4
PHYS 3384	Thermodynamics and Solid State Physics	4
PHYS 3391	Further Digital Electronics and Microprocessor Systems	4
PHYS 3393	Earth Materials, Earth Processes and Seismology	4
PHYS 3394	Further Materials Science	4
PHYS 3395	Thin Films and Vacuum Physics <i>(to be offered in 2013/2014)</i>	4

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

1. Students reading PHYS 2294 Materials Science 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. Students repeating PHYS 1110 Introductory Physics I and PHYS 1111 Introductory Physics II can register for these courses or opt to do the new equivalent theory courses provided that students have passed the practical components of the course.

Major in Physics

(32 CREDITS)

COURSE LISTING

PREREQUISITES

LEVEL I

SEMESTER 1

Course Code	Course Title	Credits
PHYS 1110	Introductory Physics I <i>(Remedial Only)</i>	6
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 1111	Introductory Physics II <i>(Remedial Only)</i>	6
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 (32 CREDITS)

LEVEL II/III

SEMESTER 1

Course Code	Course Title	Credits
PHYS 2280	Mathematical Methods in Physics	4
PHYS 2281	Modern Physics I	4
PHYS 3385	Electromagnetic Theory & Applications	4
PHYS 3387	Research Project	4

SEMESTER 2

Course Code	Course Title	Credits
PHYS 2283	Oscillation, Waves and Optics	4
PHYS 3381	Modern Physics II	4
PHYS 3383	Optics and Astronomy	4
PHYS 3384	Thermodynamics and Solid State Physics	4

Physics Minors

ELECTRONICS MINOR

(16 CREDITS)

LEVEL II/III

SEMESTER 1

Course Code	Course Title	Credits
PHYS 2291	Digital Electronics	4
PHYS 3382	Electronics & Control Theory	4

SEMESTER 2

PHYS 2282	Circuit Theory and Electronics	4
PHYS 3391	Further Digital Electronics & Microprocessor Systems	4

ENVIRONMENTAL PHYSICS MINOR

ANY 16 CREDITS FROM THE FOLLOWING:

LEVEL II/III

SEMESTER 1

Course Code	Course Title	Credits
PHYS 2292	Meteorology, Climatology and Pollution	4
PHYS 3392	Physical Oceanography and Geohydrology	4

SEMESTER 2

Course Code	Course Title	Credits
PHYS 2293	Fundamentals of Geophysics	4
PHYS 2295	Lasers and Solar Energy	4
PHYS 3393	Earth Materials, Earth Processes and Seismology	4

MATERIALS SCIENCE MINOR

ANY 16 CREDITS FROM THE FOLLOWING:

LEVEL II/III

SEMESTER 1

Course Code	Course Title	Credits
PHYS 2294	Materials Science	4
PHYS 3396	Ceramics	4

SEMESTER 2

Course Code	Course Title	Credits
PHYS 2295	Lasers and Solar Energy	4
PHYS 3394	Further Materials Science	4
PHYS 3395	Thin Films and Vacuum Physics	4

MEDICAL PHYSICS & BIOENGINEERING MINOR

(16 credits)

LEVEL II/III

SEMESTER 1

Course Code	Course Title	Credits
PHYS 2290	Introduction to Medical Physics and Bioengineering	4
PHYS 2291	Digital Electronics	4
PHYS 3390	Further Medical Physics and Bioengineering	4

SEMESTER 2

Course Code	Course Title	Credits
PHYS 3391	Further Digital Electronics & Microprocessor Systems	4

Note: A student cannot declare a minor in both Electronics and Medical Physics and Bioengineering.

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

CO-REQUISITES:

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 erodible 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: 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 (TO BE DISCONTINUED WITH EFFECT FROM 2013/14)
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: 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

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 2263

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: 1

COURSE CODE: BIOL 2361

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

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

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

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

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 2761

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 2862

COURSE TITLE: ANIMAL PHYSIOLOGY

NUMBER OF CREDITS: 4

PREREQUISITES: BIOL 1861 OR BIOL 1261 OR AGLS 1001 OR BIOL 1065 AND AGRI1012

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 (OFFERED IN ALTERNATE YEARS - WILL NOT BE OFFERED IN 2013/2014)

COURSE CODE: BIOL 2864

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 (OFFERED IN ALTERNATE YEARS - (WILL NOT BE OFFERED IN 2012/2013)

COURSE CODE: BIOL 2866

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: 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; Strickland 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: BIOL1261 OR (BIOL1065 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 BIOL1364 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 (WILL NOT BE OFFERED IN 2012/2013)

COURSE CODE: BIOL 3764

COURSE TITLE: ECONOMIC BOTANY

NUMBER OF CREDITS: 4

**PREREQUISITES: BIOL 1261 OR AGRI 1016 OR
BIOL 1065 AND AGRI 1012**

COURSE DESCRIPTION: Early domestication of plants and associated changes. Large-scale plantation crops - sugarcane, cocoa, coffee, citrus, and coconut. Products from secondary metabolites such as gums, dyes, resins, essential oils and spices, pharmaceuticals, narcotics. Fibres - origin, types, importance and utilisation by man. Timber production in the tropics and non-wood forest products. Under exploited plants. Ornamental horticulture.

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 (THIS
COURSE REPLACES BIOL 3765 PLANT PATHOLOGY)**

NUMBER OF CREDITS: 4

**PREREQUISITES: EITHER (BIOL 1261 AND BIOL 1061
OR (BIOL1362 AND BIOL1364)) 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 3861

COURSE TITLE: ANIMAL BEHAVIOUR

NUMBER OF CREDITS: 4

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: III

SEMESTER: 1 (WILL NOT BE OFFERED IN 2012/2013)

COURSE CODE: BIOL 3865

COURSE TITLE: ANIMAL BIOTECHNOLOGY

NUMBER OF CREDITS: 4

PREREQUISITES: BIOL 2162 OR BIOL 2362

COURSE DESCRIPTION: Definition and scope of biotechnology. A survey of important technological revolutions and their application to nutrition, health, genetic conservation and improvement of animals, including an advanced treatment of technologies such as genome projects, cell culture, cloning, science and practice of transgenesis and molecular marker technology and their applications to reproductive biotechnology, marker-assisted breeding, nutritional biotechnology, animal health and conservation of wildlife and breeds.

The course consists of thirty-six (36) hours of lectures and six (6) three-hour laboratory sessions.

Assessment:

Coursework	40%
Final Examination	60%

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 1060 (REMEDIATION ONLY)

COURSE TITLE: INTRODUCTORY CHEMISTRY I

NUMBER OF CREDITS: 6

PREREQUISITES: CHEM 0060 & CHEM 0061 OR CAPE CHEMISTRY OR EQUIVALENT.

COURSE DESCRIPTION: Theory: Atomic Structure, periodic properties, bonding and molecular structure including covalent bonding. Structure of organic molecules, reactions of functional groups of organic compounds. IR Spectroscopy.

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 1061 (REMEDIATION ONLY)

COURSE TITLE: INTRODUCTORY CHEMISTRY II

NUMBER OF CREDITS: 6

PREREQUISITES: CHEM 0060 & CHEM 0061 OR CAPE CHEMISTRY OR EQUIVALENT.

COURSE DESCRIPTION: Theory: Introduction to main group chemistry, ionic bonding, co-ordination chemistry and elementary symmetry theory. Energy, energy distribution in molecules. The first and second laws of Thermodynamics. Chemical equilibrium, reaction kinetics.

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%
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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
CO-REQUISITE: CHEM 1067
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
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 ^1H 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
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: 2
COURSE CODE: CHEM 2260
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 2360

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: 2

COURSE CODE: CHEM 2460

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: 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

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

PREREQUISITES: 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: III

SEMESTER: 1

COURSE CODE: CHEM 3267

COURSE TITLE: BASIC ORGANIC CHEMISTRY II

NUMBER OF CREDITS: 3

PREREQUISITES: 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

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 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: III

SEMESTER: 2

COURSE CODE: CHEM 3367

COURSE TITLE: THERMODYNAMICS AND STATISTICAL THERMODYNAMICS

NUMBER OF CREDITS: 3

PREREQUISITES: 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: III

SEMESTER: 1

COURSE CODE: CHEM 3467

COURSE TITLE: BASIC ANALYTICAL CHEMISTRY

NUMBER OF CREDITS: 6

PREREQUISITES: 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

PREREQUISITES: 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
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, CHEM 2260, CHEM 2360, 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: 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: I

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.

COURSE CONTENT: Steps in solving a problem: Problem solving steps to solve a problem that has an algorithmic solution; Structured and unstructured approaches to solving problems. Elementary Programming Concepts: Concept of a program; Assemblers, interpreters and compilers; Number representation in computers. C Basics: Fundamental concepts for solving problems on computers; Basic data types of variables and constants. Sequence Logic: Data collection - Reading from the keyboard; Processing- Assignment of variables; Calculations; Operators and logic. Output: Displaying data on the screen. Selection Logic: If construct; If...else construct; Nested if. Repetition Logic: While construct; For construct; Scope of variables. Working with Text Files: Data formats for text files; Reading; Writing. Functions: Modularization in program design; Function headers; How to return a value. Arrays: Declaring one-dimensional arrays; Finding largest and smallest values.

Assessment:

Coursework	40%
(2 Assignments- to develop computer programs: 15% and 2 Examinations: 25%)	
Final Examination - One 2-hour written paper	60%

LEVEL: I

SEMESTER: I

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.

COURSE CONTENT: Data Storage: Gates: AND, OR, NOT, NAND; 1-bit memory, flip-flop; Main memory organization; storage hierarchy; Data representation: characters, integers, floating-point numbers. Data Manipulation: CPU, registers, instruction execution cycle, instruction set; Stored program concept, program execution; Performance enhancements: cache, pipelining; I/O modules. Operating System Fundamentals: Management of resources; Scheduling - process, process table, swapping; Memory management - partitions, demand paging, virtual memory. Algorithms: Iterative and recursive structures; efficiency and correctness. Programming Languages: Program translation; programming paradigms; Procedural, Object-oriented and declarative programming.

Database Structures: Database issues; The relational model, relational operations - select, join, project.

Assessment:

Coursework	40%
(2 Assignments: 10% each and 2 Examinations: 10% each)	
Final Examination - One 2-hour written paper	60%

LEVEL: I

SEMESTER: I

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.

COURSE CONTENT: Logic: Propositions; Logical equivalence; Truth Tables; Simplified Logic. Proof Methods: Direct Method; Contradiction; Contra positive; Induction (Storage and Weak); Recursive Equations. Set Theory: Definitions; Intersections, Unions, Complements, Universal Sets, Set Difference, Symmetric Difference, Equivalence, Venn Diagrams; Set Algebra; Set Proofs (With and Without Set Algebra). Functions and Relations: Definitions; Reflexive, Symmetric, Transitive Relations; Closure; Examples of Relations; One to one and Onto and Invertible Functions. Mathematical Software: Design and Write Programs to demonstrate all of the above topics (Note: Using Symbolic Packages).

Assessment:

Coursework	40%
(6 Assignments: 22%	
6 Quizzes: 6% and	
2 Examinations: 12%)	
Final Examination - One 2-hour written paper	60%

LEVEL: I

SEMESTER: I

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.

COURSE CONTENT: HTTP Protocol .Presentation abstractions .Web-markup and display languages. Cascading Style Sheets. Introduction to a scripting language - User input, arithmetic, equality and relational logical and operators; Control statements; Functions, arrays, objects. Dynamic HTML.

Assessment:

Coursework	40%
(2 Assignments: 16%	
Lab Practical Test: 8% and	
Written Examination: 16% each)	
Final Examination - One 2-hour written paper	60%

LEVEL: I

SEMESTER: 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.

COURSE CONTENT: Structures: Declaration; User defined types; Arrays of structures; Nested structures. Characters and Strings: Character representation in computers; Reading and writing characters to and from files; String operations. Sorting, Searching and Merging: Sorting arrays; Inserting elements in place; Sorting parallel arrays; Binary search; Merging ordered lists. Random Numbers: Random and pseudo random numbers; Random number generation and ranges. Games and Simulation. Numerical Methods.

Assessment:

Coursework	40%
(2 Assignments: 15% and	
2 Examination: 25% each)	
Final Examination - One 2-hour written paper	60%

LEVEL: I

SEMESTER: 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.

COURSE CONTENT: Pointers: Concept of a pointer; Pointers as arguments; Pointer arithmetic. Linked Lists: Operations of a linked list – Counting, Searching, Getting last node; Allocating space -malloc, calloc sizeof, free; Adding; Deleting; Sorted lists; Merging. Abstract Data Types: Stacks - Array implementation; Linked list implementation; Queues - Array implementation; Linked list implementation. Recursion: Recursive functions; Recursive applications. Files: Reading data from a file; Sending output to a file; Text file vs binary files; Opening and closing files; Binary files; Random access files; Indexed files.

Assessment:

Coursework	40%
(2 Assignments: 15% and	
2 Examination: 25% each)	
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.

COURSE CONTENT: Introduction to Number Theory: Modulo Arithmetic; Division Algorithm; Greatest Common Divisor; Least Common Multiple; Prime Factorization; Solving Linear Diophantine Equations. Counting and Probability: Definitions; Introduction to Discrete Probability; Bayes' Theorem; Permutations; Combination s; Pigeon Hole Principle. Matrices: Matrix Algebra; Determinants; Row Operations; Gaussian Elimination; Inverse; Solutions of Systems of Linear Equations. Series: Divergent and Convergent Sequences; Recursive Sequences; Order of Sequences; Series Definition; Convergent and Divergent Series. Limits: Definition; Indeterminate Forms; Epsilon - Delta Definitions; Continuity and Differentiability. Mathematical Software: Design and Write Programs to demonstrate all of the above topics. (Note: Using Symbolic Packages).

Assessment:

Coursework	40%
(6 Assignments: 22%	
6 Quizzes: 6% and	
2 Examinations: 12%)	
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.

COURSE CONTENT: Networking and the Internet: Network Fundamentals; The Internet; The World Wide Web; Internet Protocols; Security. Software Engineering: The Software Engineering Discipline; The Software Life Cycle; Software Engineering Methodologies; Modularity; Tools of the Trade; Quality Assurance; Documentation; The Human-Machine Interface; Software Ownership and Liability. Data Abstractions: Basic Data Structures; Related Concepts; Implementing Data Structures; A Short Case Study; Customized Data Types; Classes and Objects; Pointers in Machine Language. Computer Graphics: The Scope of Computer Graphics; Overview of 3D Graphics; Modelling; Rendering; Dealing with Global Lighting; Animation.

Artificial Intelligence: Intelligence and Machines; Perception; Reasoning; Additional Areas of Research; Artificial Neural Networks; Robotics; Considering the Consequences. Theory of Computation: Functions and Their Computation; Turing Machines; Universal Programming Languages; A Noncomputable Function; Complexity of Problems; Public-Key Cryptography.

Assessment:

Coursework	40%
(2 Assignments: 10% each and 2 Examinations: 10% each)	
Final Examination - One 2-hour written paper	60%

LEVEL: II

SEMESTER: 1

COURSE CODE: COMP 2000

COURSE TITLE: DATA STRUCTURES

NUMBER OF CREDITS: 4

**PREREQUISITES: COMP 1100 AND 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 1100 AND 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 1100 AND COMP 1200
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 2012/2013
COURSE CODE: COMP 2400
COURSE TITLE: INFORMATION SYSTEMS
NUMBER OF CREDITS: 4
PREREQUISITES: COMP 1100 AND COMP 1200 OR COMP 1401 AND EITHER COMP1404 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 1100 AND 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 2012/2013
COURSE CODE: COMP 2600
COURSE TITLE: THEORY OF COMPUTING I
NUMBER OF CREDITS: 4
PREREQUISITE: MATH 1140 OR COMP 1300

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 1100 AND 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: 2

COURSE CODE: COMP 3220

COURSE TITLE: HUMAN-COMPUTER INTERACTION

NUMBER OF CREDITS: 4

PREREQUISITE: COMP1200

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 2012/2013

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 2012/2013

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 2012/2013

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 2012/2013

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 2012/2013

COURSE CODE: COMP 3750

COURSE TITLE: NUMERICAL COMPUTING

NUMBER OF CREDITS: 4

PREREQUISITE: COMP2100

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 2012/2013

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: NOT OFFERED IN 2012/2013

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: 1

COURSE CODE: COMP 3990

COURSE TITLE: PROJECT

NUMBER OF CREDITS: 4

PREREQUISITES: COMP2500 AND COMP3250

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
SEMESTERS: 1 & 2
COURSE CODE: FOUN 1101
COURSE TITLE: CARIBBEAN CIVILISATION
NUMBER OF CREDITS: 3
PREREQUISITES:
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 students' 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)

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.

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:

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

SEMESTER: I AND EVENING UNIVERSITY - SEMESTER I

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.

COURSE CONTENT: Information Technology - Basics: Overview of the history of IT; Impact of IT on business and society; Stages of Data Processing in an organization (input, processing, output); Difference between Data and Information; Characteristics of valuable information; Information and Management Decision Making; Information Systems: classifications and examples.

Pervasive Themes in IT: User Centeredness; Information Assurance and Security; IT Systems Model; Management and Complexity; Organizational Issues; Information and Communication Technologies; Emerging Computing Environments. Technical Foundations of Information Systems: Computers and Information Processing; Hardware Components associated with Information Systems; Information Systems Software; Managing Data Resources; Telecommunications and Networks; The Internet: Electronic Commerce and Electronic Business. IT Ethics, Impact and Security; Ethical Issues; Impact of IT on organizations and jobs; Impact of IT on individuals at work; Impact of IT on society and internet communities; Vulnerability of Information Systems and computer crimes; Protecting Information Resources.IT and its Related and Informing Disciplines Computer Science; Software Engineering; Database Systems; Computer Architecture; Human-Computer Interaction; Other disciplines. Application Domains: Bio-informatics, Medicine, Business, Law Enforcement, Education, Entertainment, Agriculture, etc.

Assessment:

Coursework	40%
(3 Assignments: 20% and Two 1-hour Examinations: 20%)	
Final Examination - One 2-hour written paper	60%

LEVEL: I

SEMESTER: I AND EVENING UNIVERSITY - SEMESTER I

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.

COURSE CONTENT: HTTP Protocol. Presentation abstractions .Web-mark-up and display languages. Cascading Style Sheets. Introduction to a scripting language -User input, arithmetic, equality and relational logical and operators, Control statements ,Functions, arrays, objects. Dynamic HTML

Assessment:

Attendance and Participation	10%
5 Lab Examinations	10% each
Project	40%

(NO FINAL WRITTEN EXAMINATION)

LEVEL: I
SEMESTER: I AND EVENING UNIVERSITY - SEMESTERS I & 3
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.
COURSE CONTENT: Six Steps in Problem Solving: Describe the difference between unstructured and structured solutions to problems. List and describe the six problem solving steps to solve a problem that has an algorithmic solution. Problem Solving and Programming Structure (Flowcharting preferred): Develop programs for the computer using the program developmental tools. Use the sequential logic structure to solve a problem. Use the decision structure to solve a problem. Use the repetition structure to solve a problem. Develop a case-driven solution for a problem. Fundamental Concepts for Solving Problems on Computers: Explain the fundamental concepts for solving problems on computers. Differentiate between the basic data types of variables and constants. Describe what a program is. Distinguish between an assembler, interpreter and compiler. Data Storage and Organization: Describe how data is stored and organized. Differentiate between fields, records and files. Describe the importance of internal and external documentation. Arrays: Develop problem solutions for the computer using one-dimensional and two-dimensional arrays. Apply various sorting techniques to arrays. Perform a linear search of an array. Perform a binary search of an array. Programs Using Modules and Local/Global Variables: Explain the advantages of modularization in program design. Identify the components of a programmer defined method. Use value-returning and non-value returning methods in a programming problem. Design a hierarchy chart. Explain the differences between global and local variables.
Assessment:

Coursework	40%
(3 Assignments: 20% and	
Two 1-hour Examinations: 20%)	
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: I AND EVENING UNIVERSITY - SEMESTER 3
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.
COURSE CONTENT: Mathematical Modelling. Logic and Proofs: Propositions, Logical Equivalence, Quantifiers; Induction. Sets, Relations and Functions. Algorithms: Introduction to Algorithms and Analysis of Algorithms; Problem Solving. Introduction to Number Theory: Representation of Integers and Integer Algorithms. Counting Methods: Counting, permutations, and combinations.
 Introduction to Boolean Algebra: Introduction to Boolean Algebra, Combinatorial Circuits; Logic Tables, Boolean Expressions. Matrices.
Assessment:

Coursework	40%
(6 Assignments: 20% and	
Two 1-hour Examinations: 20%)	
Final Examination - One 2-hour written paper	60%

LEVEL: I
SEMESTER: 2 AND EVENING UNIVERSITY - SEMESTERS 2 & 3
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.
COURSE CONTENT: Problem decomposition. The role of Algorithms in the problem-solving process. Basic syntax and semantics of a higher-level language. Variables, types, expressions, and assignment. Conditional and iterative control structures. Simple I/O. Methods and parameter passing. Arrays. Debugging strategies.
Assessment:

Coursework	40%
(4 Assignments: 20% and	
Two 1-hour Examinations: 20%)	
Final Examination - One 2-hour written paper	60%

LEVEL: I

SEMESTER: 2 AND EVENING UNIVERSITY - 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.

COURSE CONTENT: Information Systems: Define data and information. Identify the qualities of information. Differentiate between fields, records and files. Explain the basic components of an IT system and its capabilities. Inside the computer system: Explain how data is represented and stored in a computer system. (Numbering systems, 1's and 2's complement, floating point representation). Identify and explain the function of the internal components of a computer system. Discuss the relationship between the components of a computer system and how to interact to get a task done. Discuss the computer operations (input, processing, output and storage). Discuss different approaches to processor design and their appropriateness of use. Input and Output of information: Analyze input requirements of a system. Discuss the common methods of input collection, masking. Identify common input validation techniques. Identify common modes of processing information. Analyze the output requirements of a system. Identify common output validation techniques. Data Storage and Organization: Describe the various types of storage devices and media in each of the areas outlined. Organization of data. Principles of operation. Performance . Suitable applications. Describe methods and procedures for backing up files. Software: Identify and differentiate between the types of software. List the function and used of common software suite applications. Operating Systems: Explain the purpose of an operating system. Identify the common Interface types of operating systems giving examples. Identify components common to all operating systems and explain the purpose of each. List common operating system platforms. Navigate two common operating system platforms to get basic information about a system.

Assessment:

Coursework	40%
(3 Assignments: 20% and	
Two 1-hour Examinations: 20%)	
Final Examination - One 2-hour written paper	60%

LEVEL: I

SEMESTER: 2 AND EVENING UNIVERSITY - 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

COURSE CONTENT: Data Management Principles: Data Quality; Data Cleaning; Data as an Asset; Sharing of Data and Accessibility of Data; Fitness of Data; Law and Regulation Compliance; Security of Data; Data Definition; Duplication and Copy control. Data Integration and Interoperation: Data Processing Programs; Data Management systems. Databases: Role of a Database; Database Structure (Fields, Rows, Tables); Types of Databases. Spreadsheets: Role of a Spreadsheet; Differences between Spreadsheets and Databases; Databases and Spreadsheets – the need for integration in solutions; Role of Excel as a Flat File Database; Excel Architecture Overview. Financial Modelling: Modelling concepts; Variables; Relationships; Input, processing and output; Layout Issues; Excel Object Hierarchy; Object properties and Methods; Excel events; Visual Basic Overview. Introduction to Financial Modelling in Excel: GUI and Code access types; Overview of code; Objects and collections in Excel; Worksheet and User Forms. Advanced Excel Concepts 1: Excel arrays; Functions; Naming Scheme; Formatting Scheme; Data Validation; Excel Controls; Data Management features in Excel; Pivot Tables; What-if analysis; Report Manager; Data from the Internet. Advanced Excel Concepts 2: Excel Programming Introduction; Excel Object Hierarchy; Excel Event Procedures; Excel Macro Recorder; Writing Visual Basic Code; Decision Structures in Visual Basic; Visual Basic Controls; Functions in Visual Basic.

Assessment:

Coursework	40%
(4 Assignments: 24% ;	
One 1-hour practical Examination: 8% and	
One 1-hour written Examination 8%)	
Final Examination - One 2-hour written paper	60%

LEVEL: I

SEMESTER: 2 AND EVENING UNIVERSITY - SEMESTER 3

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.

COURSE CONTENT: Economics Theory: Introduction to Basic Economic Concepts; Economic Valuation; Micro and Macro economics; Economics Planning and Control; Resource allocation; Budgeting. Costing and Finance: Marginal or Direct Costing; Depreciation; Overheads; Stock Evaluation; Product Costs; Labour Costs. Management Accounting: Basic accounting concepts and practices; Reporting results; Differentiating between budgets and forecasts; Profit and loss. Principles of Management: Overview of basic management principals; Planning; Organizing; Leadership; Motivation; Communication. Project Management Basics: Defining the project; Project life cycle; Role of the project manager. Managing a Project: Scope; Work break down structure; Network analysis; Budgeting and scheduling; GNATT chart; Critical path method. Organizing - Work breakdown structure; Responsibility; Responsibility assignment matrix; Team building. Leading - Shared vision; Managing reward; Motivation; Managing conflict. Control - Project control system; Project monitoring and evaluation; Reporting progress.

Assessment:

Coursework	40%
(2 Assignments: 20%, 1 Group Project: 10%)	
1 one-hour Examination: 10% each)	
Final Examination - One 2-hour written paper	60%

LEVEL: II

SEMESTER: 2 AND EVENING UNIVERSITY - 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.

COURSE CONTENT: Organizational Foundations of Information Systems: Organizations and Business Processes. Information, Management and Decision Making. Information Systems, Types of Information Systems. Making the Business Case: Identifying and Selecting Systems, Development Projects, Initiating and Planning Systems Development Projects. Information Systems Analysis: Determining System Requirements, Introduction to Structuring Systems Requirements, Selecting the Best Alternative Design Strategy. Technical Foundations of Information Systems: Hardware, Software, Data/Information, Procedures, People, Telecommunications and Networks, the Internet, Electronic Commerce. Introduction to Information Systems Design: Designing Forms and Reports, Designing User Interfaces and Dialogues, Designing Databases, Designing the Internals: Programme and Process Design, Designing Distributed Information Systems. Information Systems Implementation and Maintenance: Information Systems Security and Control and Privacy and Ethical Issues.

Assessment:

Coursework	40%
(3 Assignments: 30% and 1 one-hour Written Examination: 10%)	
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 AND INFO 1420 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.

COURSE CONTENT: Propositional Logic: Review of logical connectives and their truth tables. Tautologies and contradictions. Equivalences. Propositional logic. Valid arguments. Derivation rules. Proving arguments valid. Predicate Logic: Quantifiers and predicates. Derivation rules. Proving arguments valid. Proof Techniques Including proofs by Induction: Review of proof techniques. First principle of mathematical induction Second principle of mathematical induction Elementary Number Theory and Cryptography: Divisors. The greatest common divisor (gcd) and its properties. Prime numbers. Relatively prime numbers. Sieve of Eratosthenes. Well-ordering principle. The Division algorithm. Euclidean algorithm. Expressing the gcd as a linear combination. Basic introduction to rational and irrational numbers. Modular arithmetic. Multiplicative inverse modulo n. Linear ciphers. RSA encryption. Introduction to Python programming. Introduction to Recurrence Relations and Recursion: Recursive definitions. Recursively defined sequences, sets and operations. Recursively defined algorithms. Solving recurrence relations.

Assessment:
Coursework 40%
(2 Assignments: 20% and
2 one-hour Examinations: 20%)
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.

COURSE CONTENT: Primitive types. Array. Records. Strings and string processing. Data representation in memory. Pointers and reference. Linked structures. Hashing function. Use of stacks, queues. Use of graphs and trees. Strategies for choosing the right data structure.

Assessment:
Coursework 40%
(3 Assignments: 20% and
2 one-hour Written Examinations: 20%)
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
PREREQUISITE: 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.

COURSE CONTENT: Introduction to Database Systems: Database/File-based systems; DBMS Functions, Components of a Relational Database System, Introduction to Database Design. The Relational Data Model-Relational Data Objects, Data Integrity, and Relational Operators. Structured Query Language: Data Definition Commands, Data Manipulation Commands, Views, Privileges and Roles Triggers and Stored Procedures. Database Design: ER Modelling, Functional Dependency and Normalization, Transaction Management: Transaction Processing Concepts, Concurrency Control, Recovery, Security, Steps in Processing and SQL Query, Cost-based Query Optimization. Database and the Internet: Web Technology and Databases, ODBC/JDBC, XML and Databases. Distributed Databases: Distributed Database Design, Fragmentation and Replication. Database Administration: Managerial Functions, Technical Functions.

Assessment:
Coursework 40%
(3 Assignments: 21%
1 one-hour Written Examination: 10% and
1 two-hours Practical Examination: 9%)
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.

COURSE CONTENT: Introduction to Objects: Definition and properties of objects. The object factory- the Class. Class declarations. Object creation. Calling instance methods. Object storage and management. Class variables and class methods. Writing class declarations. The String class. Arrays of object. Searching and sorting arrays of objects Linked Lists: The notion of a linked list. Nodes and links. Basic operations on a linked list. A linked list class. Examples using linked lists. Elementary Data Structures: The stack data structure and its operations. The array implementation of a stack. Examples using the stack data structure. The queue data structure and its operations. The array implementation of a queue. Examples using queues. Implementing a stack and a queue using a linked list The notion of an abstract data type. Recursion: The notion of a recursive definition. The principle of induction and its connection to recursion. Writing recursive methods. Examples 2-dimensional arrays.

Assessment:
Coursework 40%
(4 Assignments: 20% and
2 one-hour Examinations: 20%)
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
PREREQUISITE: 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.
COURSE CONTENT: Digital Logic. Data Representation. Instruction Set Architectures. Processor Structure and Function. Control Unit. Bus Interconnection. Cache Memory. I/O Architecture.
Assessment:
Coursework 40%
(2 Assignments: 20% and
2 one-hour Examinations: 20%)
Final Examination - One 2-hour written paper 60%

LEVEL: II
SEMESTER: 1 AND 3
COURSE CODE: INFO 2430
COURSE TITLE: BUSINESS INFORMATION SYSTEMS
NUMBER OF CREDITS: 4
PREREQUISITE: INFO 1400 AND INFO 1405 OR
INFO 1506 AND INFO1507
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.
COURSE CONTENT: Business models. Organizational theory, structures and functions. System concepts and theories. Value chain and supply chain. Functional business areas (accounting, finance, marketing, human resources, logistics & manufacturing). Introduction to e-business. Business Information Systems: Revenue Cycle (sales order processing, billing, accounts receivable customer relationship). Expenditure Cycle (purchasing, accounts payable, inventory). Production Cycle. Human Resources/Payroll. General ledger and financial reporting system. VBA Programming.
Assessment:
Coursework 40%
(3 Assignments: 24%
1 one-hour Written Examination: 8% and
1 two-hours Practical Examination: 8%)
Final Examination - One 2-hour written paper 60%

LEVEL: II

SEMESTER: NOT OFFERED IN 2012/2013

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.

COURSE CONTENT: Foundation of Networking: What is the Internet? The Network Edge; The Network Core; Delay and Loss; Protocol layers and their service models. Application Layer: Principles of Network Applications; Applications: FTP, Email, DNS. Transport Layer: Introduction to Transport-Layer services; Multiplexing and demultiplexing; UDP. Principles of Reliable Data Transfer; TCP; Congestion Control. Network Layer: Introduction; Virtual Circuit and Datagram Networks; Inside a Router; The Internet Protocol (IP); Introduction to Routing Algorithms. The Link Layer and Local Area Networks: Link Layer Services; Multiple Access Protocols; Link Layer Addressing; Ethernet; PPP. Wireless and Mobile Networks: Introduction; Wireless Links and Network Characteristics; WiFi; 802.11 Wireless LANs; Cellular Internet Access; Mobility Management. Network Design: Network Design Process; Network Design Examples. Practical Networking: Crimping; Configuration of Routers; Knoppix networking; Subnetting; Wireless Network Configuration; Network Troubleshooting; Network Management. Network Security.

Assessment:

Coursework	40%
(3 Assignments: 20%,	
1 one-hour written Examination: 10%	
1 two-hour Practical Examination: 10%)	
Final Examination - One 2-hour written paper	60%

LEVEL: III

SEMESTER: I 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.

COURSE CONTENT: System Tools: Basic systems programming, process creation, input/output re-direction, process overlaying, manipulating semaphores, basic shell scripting, OS administration. Hardware Review: Review of Von Neumann computer architecture. Process and Process Management: Process creation/destruction, implementation, process table entries. Context switching, interrupt handling, inter-process communication, race conditions, mutual exclusion, critical regions, busy-waiting solutions, sleep-wakeup solutions, scheduling algorithms. Deadlocks: Definitions and methods of dealing with deadlocks. Memory Management: Multiprogramming, relocation and protection, swapping, virtual memory. Virtual Memory Management: Pages, page frames, page tables, address translation, memory management units (MMU), page faults, page replacement algorithms. File Systems: Contiguous allocation, linked-list allocation, index-nodes, implementing directories. Input/Output: Device controllers, direct memory access, interrupt handlers, device drivers. Resource Protection: Protection domains, access matrices, access lists, capabilities lists, lock-key mechanisms.

Assessment:

Coursework	40%
(2 Assignments: 20% and	
2 one-hour Examination: 20%)	
Final Examination - One 2-hour written paper	60%

LEVEL: III

**SEMESTER: I AND EVENING UNIVERSITY - SEMESTER 1
(LAST OFFERING 2012/2013)**

COURSE CODE: INFO 3405

COURSE TITLE: NETWORKING TECHNOLOGIES

NUMBER OF CREDITS: 4

PREREQUISITE: INFO 2425

COURSE CONTENT: Foundations of Networking: Introductory topics eg. Nodes, routers, transmission media, etc. Introduction to ISO/OSI and Internet reference models. Rationale for layered architectures. Layer functionality. Routing and Switching: Router and switch functions and usage. Configuration of routers and switches for enterprise networks. Network Operating Systems: Windows networking features. Linux networking features. Configuring settings for main network related applications/systems e.g. setting up of subnet masks and IP addresses; setting up DNS and DHCP servers. Wireless Computing: Wireless application protocols. Wireless bridges, adapters, access points, etc. Setting up a wireless network. Security. Network Management: Performance, configuration, accounting, fault and security management Practical examples

Assessment:

Coursework (test/assignments) 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.

COURSE CONTENT: Client-side programming. Server-side programming. Web services. Web servers. Open Source and Proprietary Server Software. Emerging technologies. Web Standards and Standards Bodies. Website implementation and integration.

Assessment:

Coursework 40%
(3 Assignments: 18% and
1 Project: 22%)
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 COMP2200

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.

COURSE CONTENT: Information assurance analysis model. Security implementation mechanisms. Authentication, Intrusion Detection. Operational issues. Asset Management. Attacks. Security Domains. Vulnerabilities.

Assessment:

Coursework (test/assignments) 40%
2 Assignments: 14%
1 one-hour Examination: 10%and
1 Group Project: 16%)
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 COMP2500
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 major programming paradigms.
COURSE CONTENT: Introduction: concepts and paradigms, syntax, semantics and pragmatics. Language processors. Values and types: primitive types, composite types, recursive types, type systems and expressions. Variables and storage: simple variables, composite variables, copy semantics, reference semantics, lifetime, pointers, commands, expressions with side effects. Bindings and scope: bindings and environments, scope, declarations and blocks. Procedural abstraction :procedures and functions, parameters and arguments, copy and reference parameter mechanisms.. Data abstraction: program units, packages and encapsulation, abstract types, objects and classes. Control flow: sequencers, jumps, escapes and exceptions. Programming language paradigms: case studies illustrating the following paradigms: imperative, object-oriented programming, functional, logic and scripting. Language selection: criteria and evaluation.

Assessment:
Coursework 40%
(3 Assignments: 24% and
1 one-hour Examination: 16%)
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.
COURSE CONTENT: Professional aspects of ethical decision making. Intellectual properties: Ownership of information, plagiarism, copyright, patent and trademark laws. Legal issues in computing: Compliance, computer crime, system use policies and monitoring, software piracy, risks and liabilities of computer-based systems, privacy and civil liberties. Globalization issues. On-line communities and social implications.

Assessment:
Coursework 40%
(2 Assignments: 20%
1 one-hour Examination: 10%and
1 Project (case study): 11%)
Final Examination - One 2-hour written paper 60%

LEVEL: III

SEMESTER: NOT OFFERED IN 2012/2013

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.

COURSE CONTENT: Introduction to Programming using a professional scientific programming system e.g. Maple or MatLab. Vectors and matrices. Scripts, functions, errors and plotting. Loops and conditional statements. Visualizing Data: 2-D and 3-D plots. Root-finding: bisection, fixed-point iterations, Newton-Raphson and scant methods. Interpolation and Extrapolation; Interpolation of non-smooth data. Matrices; modelling problems; solutions using mathematical software. Numerical integration; area under the curve, approximations. Applications of Probability and Statistics. Simulation and random numbers: basic statistical measures, random numbers and distributions, modelling dynamical systems.

Assessment:

Coursework	40%
(3 Assignments: 24% and 1 one-hour Examination: 16%)	
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.

COURSE CONTENT: Major business models for Business-to- Consumer, Business-to-Business, Consumer-to-Consumer, and Business-to-Government models .E-commerce infrastructure: the internet, web and mobile platforms .E-commerce payment systems. E-commerce security environment, security threats, technology and business solutions. E-commerce marketing strategies. Systematic approach to building an E-commerce web site.

Assessment:

Coursework	40%
(1 Group Project)	
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

COURSE CONTENT: Introduction to Software Engineering; Computer-based System Engineering. Software: Nature and Qualities. Programming in the Small versus Programming in the Large. Software Life-Cycle and Process Models. Requirements Analysis: Determining System Requirements, Use Cases, System Operation Contracts, Process Modelling, Data Modelling. Design: Architectural Design, User Interface Design, Program and Process Design. Blending Analysis and Design: Object-Oriented Analysis and Design, Rapid Application Development. Implementation. Verification and Validation: Aspects of Quality and their Importance, Quality Assurance Techniques, Testing Methods, Concepts of Formal Verification, Software Testing Management, Unit Testing with JUnit. Software Project Management: Project Planning, Software Estimation, Risk Management. Software Tools and Environments; Programming Environments, Modelling Tools, Testing Tools, Product Management.

Assessment:

Coursework	40%
(2 Assignments: 14% and 1 Group Project: 26%)	
Final Examination - One 2-hour written paper	60%

LEVEL: III

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.

COURSE CONTENT: Assessing project feasibility. Methods of investigation. Project planning. Project management methodology. Select and implement an appropriate project on some topic in IT. This may include design and implementation of a computer application.

Assessment:

Coursework	80%
(Requirements Engineering: 10%, Project Management: 10% Project Planning 10% Software Design and Implementation 40% Software Testing 5% Documentation 5%)	
Presentation	20%
(NO FINAL WRITTEN EXAMINATION)	

LEVEL: III

SEMESTER: NOT OFFERED 2012/2013

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.

COURSE CONTENT: Introduction to Human-Computer Interaction. Task-centred system design: Task-centred process; Development of task examples; evaluation of designs through a task-centered walk-through. User-centred design and prototyping: Assumptions; Participatory design; Methods for involving the User; Prototyping; Low fidelity prototypes, medium fidelity prototypes; wizard of Oz examples. Methods for evaluation of interfaces with Users: Goals of evaluation, approaches, ethics, introspection; Extracting the conceptual model; direct observation; constructive interaction, interviews and questionnaires; continuous evaluation via user feedback and field studies; choosing an evaluation method. Beyond screen design: characteristics of good representations; information visualization, Tufte's guidelines; visual variables, metaphors, direct manipulation. Graphical screen design. graphical design concepts. components of visible language; graphical design by grids. Design principles and usability heuristics: design principles; principles to support usability; golden rules and heuristics; HCI patterns. Current and future HCI: mobile, multimedia, ubiquitous, gesture interfaces; biometric, affective, natural interfaces; interfaces for disabled and people with special needs; Interfaces for Disabled. HCI design standards: process-oriented standards; product-oriented standards; strengths and limitations of HCI Standards.

Assessment:

Coursework (3 Assignments)	70%
Final Examination - One 2-hour written paper	30%

LEVEL: III

SEMESTER: NOT OFFERED 2012/2013

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.

COURSE CONTENT: CISCO network equipment (Routers and Switches). TCP/IP . LAN fundamentals. WAN fundamentals. NAT/PAT. DHCP. PPP Networks. Advanced WAN Technologies.

Assessment:

Coursework	40%
(2 Assignments: 20%;	
1 one-hour written Examination: 10% and	
1 one-hour practical Examination: 10%)	
Final Examination - One 2-hour written paper	60%

LEVEL: III

SEMESTER: NOT OFFERED 2012/2013

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 1' and 'Certified MySQL DBA 2' examinations.

COURSE CONTENT: MySQL Administrator: Installation and Tools; Interpreting Error and Diagnostic Information. MySQL Architecture: Client/Server Overview; Communication Protocols; The SQL Parser and Storage Engine Tiers; How MySQL Uses Disk Space; How MYSQL Uses Memory. Installing, Configuring, Starting and Stopping: MySQL Distributions - Installing on Windows, Installing on Linux and UNIX, Some Security Issues. Table Management: Tables, Data Types and Character Set Support; Table Management; Locking Concepts; Storage Engines; Table Maintenance. Backup and Recovery: Planning and Implementing a Backup and Recovery Strategy; Defining a Disaster Recovery Plan. User Management: Managing Privileges. Stored Routines for Administration: Types of Stored Routines; Benefits of

Stored Routines; Stored Routines Features; Stored Routine Maintenance; Stored Routine Privileges and Execution Security; Triggers. Securing the Server: Security Issues; Operating System Security; Filesystem Security; Log Files and Security; Network Security. Optimizing Queries and Processes: Optimization Overview; Optimization Process; Planning a Routine Monitoring Regime ;Optimization and Indexes; Indexes for Performance; Optimizing Schemas; Normalization; Optimizing the Server; Measuring Server Load; Optimizing the Environment; Choosing the Platform; Hardware Configurations. The Event Scheduler: Event scheduler concepts; Event scheduler configuration; Creating, altering and dropping events; Event scheduler monitoring; Events and privilege

Assessment:

(2 Assignments:	20%;
1 one-hour written Examination: 10% and	
1 one-hour practical Examination: 10%)	
Final Examination - One 2-hour written paper	60%

LEVEL: III

SEMESTER: NOT OFFERED 2012/2013

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.

COURSE CONTENT: Understanding Spatial Data. GIS Data Issues. Spatial Data Models. Geographical Databases. GIS and Spatial Analysis. Data Sharing and Legal Issues. GIS and Data Modeling. GIS for Business.

Assessment:

Coursework	40%
(2 Assignments: 20%; and 2 Projects: 20%)	
Final Examination - One 2-hour written paper	60%

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's rule 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: 1 - UNDERGRADUATE SERVICE COURSE

SEMESTERS: 1, 2 & SUMMER

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 & SUMMER
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: 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 3-hour written paper 60%

LEVEL: I
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 Movres Theorem; basic algebra of matrices of any order. Determinants. Solutions of systems of linear equations

Assessment:
Coursework 40%
Final Examination: One 3-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 3-hour written paper 60%

LEVEL: I
SEMESTER: 1
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 3-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 3-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: II
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 40%
Final Examination - One 3-hour written paper 60%

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 Bayes' rule, theorem on total probability; Conditional Probability; Random Variable; Mathematical Expectation; means, variance; Covariance of variables. Variance of sum of n random variables. Chebychev's 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's theorem 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: 2

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 MATH 1142 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: 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: NOT OFFERED IN 2012/2013

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: 2

COURSE CODE: MATH 2220

COURSE TITLE: INTRODUCTION TO ACTUARIAL MATHEMATICS

NUMBER OF CREDITS: 4

PREREQUISITES: (I) MATH 2120, (II) MATH 2140 OR MATH 3110, (III) 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 2012/2013

COURSE 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 Bayes' rule, theorem on total probability; Conditional Probability; Random Variable; Mathematical Expectation; means, variance; Covariance of variables. Variance of sum of n random variables, Chebychev's 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 2012/2013

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: 1

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 Coordinates: 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 2010/2011

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: 1

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 gonorrhoea). 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; Polya's 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, MATH2160, 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: 1
COURSE CODE: MATH 3321
COURSE TITLE: PRINCIPLES OF ASSET/LIABILITY MANAGEMENT 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 2012/2013

COURSE CODE: MATH 3410

COURSE TITLE: COMBINATORICS AND COMPUTING

NUMBER OF CREDITS: 4

PREREQUISITES: COMP 1100, COMP 1200, 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 2012/2013

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: 2
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: MKTG3000

COURSE TITLE: MARKETING MANAEMENT

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

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

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: 1
COURSE CODE: PHYS 1001
COURSE TITLE: INTRODUCTION TO ASTRONOMY
NUMBER OF CREDITS : 3
PRE -REQUISITES: NONE
RESTRICTIONS: STUDENTS READING 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 1110 (REMEDIATION ONLY)
COURSE TITLE: INTRODUCTORY PHYSICS I
NUMBER OF CREDITS: 6
PREREQUISITES: CAPE PHYSICS OR CSEC PHYSICS TOGETHER WITH CAPE MATHEMATICS .
COURSE DESCRIPTION: Mathematical Methods in Physics: Vectors; Complex numbers; Matrices and Determinants. Applications to Physics. Mechanics: Units and dimensions; Particle dynamics, Work and Energy; Conservation of mass, energy and momentum; Rotational kinematics; Equilibrium of rigid bodies; Oscillations; Gravitation; Properties of fluids; Fluid statics and dynamics. Optics: Reflection and refraction; Fermat's principle; Huygen's principle; Interference and Diffraction. Acoustics: waves in Elastic media; Acoustics and wave motion; Superposition and Interference of Waves.

Assessment:
Coursework:
Theory Coursework 10%
Practical Coursework 30%
One 3-hour Final Examination 60%
Students must pass coursework

LEVEL: I
SEMESTER: 2
COURSE CODE: PHYS 1111 (REMEDIATION ONLY)
COURSE TITLE: INTRODUCTORY PHYSICS II
NUMBER OF CREDITS: 6
PREREQUISITES: CAPE PHYSICS OR CSEC PHYSICS TOGETHER WITH CAPE MATHEMATICS
COURSE DESCRIPTION: Electricity and Magnetism: Electric Charge; Electric Field; Gauss's Law; Electric Potential; Capacitors and dielectrics; Currents in materials; Direct-current circuits; Effects, production and properties of Magnetic Fields; Faraday's Law; Inductance; Introduction to B, H and M vectors. AC Theory AC currents/voltages; AC in series and parallel LCR circuits; Vector, phasor and complex representation; Q factor; power; Transformers; 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. Thermodynamics: Thermal equilibrium; Triple point; Work; Heat; First Law of Thermodynamics; Applications of First Law; Heat capacities; Equipartition of energy; Ideal gas; Kinetic Theory; Heat conduction; application to spherical and cylindrical symmetry.

Assessment:
Theory Coursework 10%
Practical Coursework 30%
One 3-hour Final Examination 60%
Students must pass coursework

LEVEL: I
SEMESTER: I
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: This course is designed to introduce the student to topics in classical physics. Understanding Physics is crucial to the study of all sciences. Physics is the study of matter, energy, space and time and gaining a better understanding of this subject is a stepping stone to understanding the world and many of the new technologies being developed today. For this reason the topics covered address 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. Through in-class discussions, problem-solving sessions and the accompanying modules in Laboratory Physics the student will have the opportunity to improve his/her ability to reason through challenging situations in the physical world using basic principles to develop appropriate solutions.

Assessment:
Final Examination (one 2-hr paper): 60%
Coursework: 40%
- Coursework (2 in-course tests) 15%
- Quizzes (2, each 5%) 10%
- Class participation 5%
- Poster presentation 10%

LEVEL: I
SEMESTER: II
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: This course is designed to introduce you to topics in classical physics. Understanding Physics is crucial to the study of all sciences. Physics is the study of matter, energy, space and time and gaining a better understanding of this subject is a stepping stone to understanding the world and many of the new technologies being developed today. This course requires the use of Calculus, Vector analysis and Complex variable theory to understand the basic concepts in Electricity, Magnetism, AC Theory and Modern Physics. Through in-class discussions, problem-solving sessions and the accompanying module in Experimental Physics you will have the opportunity to improve your ability to reason through challenging situations in the physical world using basic principles to develop appropriate solutions.

Assessment:
Final Examination (one 2-hr paper): 60%
Coursework: 40%
- Coursework (2 in-course tests) 15%
- Quizzes (2, each 5%) 10%
- Class participation 5%
- Poster presentation 10%

LEVEL: I

SEMESTER: I

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: This course is designed to introduce the student to topics in the fundamentals of Acoustics and Waves. Understanding Physics is crucial to the study of all sciences. Physics is the study of matter, energy, space and time and gaining a better understanding of this subject is a stepping stone to understanding the world and many of the new technologies being developed today. This course provides students with the fundamentals of Oscillations and Waves. Through in-class discussions, problem-solving sessions and the accompanying module in Experimental Physics you will have the opportunity to improve your ability to reason through challenging situations in the physical world using basic principles to develop appropriate solutions.

Assessment:

- Coursework (1 in-course test)	40%
- Quiz	25%
- Class participation	15%
- Poster presentation	20%

LEVEL: I

SEMESTER: I

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: Experimentation, observation and recording skills are very necessary for Physics. Experimental Physics I is a modern, lab-based physics course where all the Year 1 students will be exposed to a variety of techniques, concepts and skills in the experimental sciences. These skills are needed for all the other components of the level 1 Physics courses and developed holistically through this course which entirely focuses on practical skills. This course is one of the six courses of Introductory Physics providing necessary background knowledge for Advanced Physics. There are practical exercises in topic areas of all the theory courses offered in Physics level 1.

Assessment:

Coursework	100%
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LEVEL: I

SEMESTER: II

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: Experimentation, observation and recording skills are very necessary for Physics. Experimental Physics is a modern, lab-based physics course where all the Year 1 students will be exposed to a variety of techniques, concepts and skills in the experimental sciences. These skills are needed for all the other components of the level 1 Physics courses and developed holistically through this course which entirely focuses on practical skills. This course is one of the six courses of Introductory Physics providing necessary background knowledge for Advanced Physics. There are practical exercises in topic areas of all the theory courses offered in Physics level 1.

Assessment:

Coursework	100%
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LEVEL: I

SEMESTER: II

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: This course is designed to introduce the student to topics in the fundamentals of Optics. Understanding Physics is crucial to the study of all sciences. Physics is the study of matter, energy, space and time and gaining a better understanding of this subject is a stepping stone to understanding the world and many of the new technologies being developed today. This course provides students with the fundamentals of Optics. Through in-class discussions, problem-solving sessions and the accompanying module in Experimental Physics you will have the opportunity to improve your ability to reason through challenging situations in the physical world using basic principles to develop appropriate solutions.

Assessment:

Final Examination (one 2-hr paper):	40%
Coursework:	60%
- Quiz	25%
- Class participation	15%
- Poster presentation	20%

LEVEL: II
SEMESTER: 1
COURSE CODE: PHYS 2280
COURSE TITLE: MATHEMATICAL METHODS IN PHYSICS
NUMBER OF CREDITS: 4
PREREQUISITES: PHYS 1110 OR PHYS 1111, OR PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 AND PHYS 1216

COURSE DESCRIPTION: 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. Applications in Physics.

Assessment:

Theory Coursework	40%
One 2-hour Final Examination	60%

LEVEL: II
SEMESTER: 1
COURSE CODE: PHYS 2281
COURSE TITLE: MODERN PHYSICS I
NUMBER OF CREDITS: 4
PREREQUISITES: PHYS 1110 AND PHYS 1111, OR PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 AND PHYS 1216

COURSE DESCRIPTION: Introduction the theory of Special Relativity: Galillean transformation. Postulates of Special Relativity. Lorentz transformation equations. : The foundations of special relativity. Relativistic kinematics and relativistic particle Mechanics. Space-time intervals. Minkowski diagrams. Nuclear Physics: The Atomic nucleus, nuclear forces. Mass and binding energy. The liquid drop model of the nucleus, shell model and collective models of the nucleus. Radioactive Decay. Neutrinos. The interaction of charged particles and radiation with matter. Nuclear reactions - fission and fusion. Elementary particles-families, observed interactions and conservation laws. Feynmann diagrams.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: II
SEMESTER: 2
COURSE CODE: PHYS 2282
COURSE TITLE: CIRCUIT THEORY AND ELECTRONICS
NUMBER OF CREDITS: 4
PREREQUISITES: PHYS 1110 AND PHYS 1111, OR PHYS 1212,

COURSE DESCRIPTION: Circuit Theory: DC and AC analysis. Electronics: Intrinsic and extrinsic semiconductors. Junction diodes: theory and applications. BJT and FET transistors, Biasing, Load line analysis, hybrid equivalent model, small signal analysis, frequency response. Feedback principles, Power amplifiers and magnetic coupling. Power supplies.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: II
SEMESTER: 2
COURSE CODE: PHYS 2283
COURSE TITLE: OSCILLATIONS, WAVES AND OPTICS
NUMBER OF CREDITS: 4
PREREQUISITES: PHYS 1110 AND PHYS 1111, OR PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 AND PHYS 1216

COURSE DESCRIPTION: Oscillation 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 and interaction of these waves. Interference Optics: Divided wave front and divided amplitude Interference with examples and necessary background theory. Geometrical Optics: Imaging by optical systems; Thin lenses; Cardinal points; Matrix method for thick lens Systems; Aberrations

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: II
SEMESTER: 1
COURSE CODE: PHYS 2290
COURSE TITLE: INTRODUCTION TO MEDICAL PHYSICS AND BIOENGINEERING
NUMBER OF CREDITS: 4
PREREQUISITES:
PHYS 1110 AND PHYS 1111, OR 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 system and the nervous system. Feedback and control systems in the body and homeostasis. Biomedical potentials, electro-oculogram, electrocardiogram, electromyogram, electroencephalogram and magnetocardiogram. The visual system and the auditory system.
Assessment:
Theory Coursework 10%
Practical Coursework 30%
One 2-hour Final Examination 60%
Students must pass coursework

LEVEL: II
SEMESTER: 1
COURSE CODE: PHYS 2291
COURSE TITLE: DIGITAL ELECTRONICS
NUMBER OF CREDITS: 4
PREREQUISITES: PHYS 1110 AND PHYS 1111, OR PHYS 1212
COURSE DESCRIPTION: Components and Devices: Basic theory and application of electronic and opto-electronic components such as zener diodes, SCR, LEDs, LDs, optical receivers, optical fibre. Digital electronics: Comparison of analogue and digital systems, Boolean Algebra, Basic logic functions NOT, AND, OR. Duality. Computational rules of logic algebra. Generalised logical system, inputs and outputs, variables, NAND, NOR, EXCLUSIVE OR, Combinational logical systems. Simplification of logical equations. KV tables up to four variables. Number system, codes, coding. Introduction to sequential systems.
Assessment:
Theory Coursework 10%
Practical Coursework 30%
One 2-hour Final Examination 60%
Students must pass coursework

LEVEL: II
SEMESTER: 1
COURSE CODE: PHYS 2292
COURSE TITLE: METEOROLOGY, CLIMATOLOGY AND POLLUTION
NUMBER OF CREDITS: 4
PREREQUISITES:
PHYS 1110 AND PHYS 1111, OR 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; 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:
Theory Coursework 10%
Practical Coursework 30%
One 2-hour Final Examination 60%
Students must pass coursework

LEVEL: II
SEMESTER: 2
COURSE CODE: PHYS 2293
COURSE TITLE: FUNDAMENTALS OF GEOPHYSICS
NUMBER OF CREDITS: 4
PREREQUISITES: PHYS 1110 AND PHYS 1111, OR PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 AND PHYS 1216
COURSE DESCRIPTION: Physics of the Earth: The geoid; Earth's internal structure and origin; the Earth-Moon system, volcanoes. Earth's magnetic field and its origin; paleo-magnetism. Terrestrial heat flow. Introduction to Geophysical Prospecting: A general survey of prospecting techniques with a brief account of relevant physical properties of rocks. Seismic, Gravity, Magnetic and Resistivity methods. Seismic digital data acquisition and processing will be introduced. Geophysical Interpretation.
Assessment:
Theory Coursework 10%
Practical Coursework 30%
One 2-hour Final Examination 60%
Students must pass coursework

LEVEL: II

SEMESTER: 1

COURSE CODE: PHYS 2294

COURSE TITLE: MATERIALS SCIENCE

NUMBER OF CREDITS: 4

**PREREQUISITES: PHYS 1110 AND PHYS 1111, OR
PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214,
PHYS 1215 AND PHYS 1216**

COURSE DESCRIPTION: Introduction: Scope of materials science. Classification of Materials. Structure of Solids: Bonding. Crystal Structure. Defects. Properties of Solids: Mechanical, electrical, thermal, optical properties. Metals and Alloys: Structure, Phase Diagrams. Polymers and Composites: Manufacture. Structure. Properties.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: II

SEMESTER: 2

COURSE CODE: PHYS 2295

COURSE TITLE: LASERS AND SOLAR ENERGY

NUMBER OF CREDITS: 4

**PREREQUISITES: PHYS 1110 AND PHYS 1111, OR
PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214,
PHYS 1215 AND PHYS 1216**

COURSE DESCRIPTION: Black body radiation and Planck's Law. Applications of Planck's law In Lasers the Sun and Solar Energy. Lasers as monochromator sources, comparison with spectrum lamps, Interference filters, monochromatic. Process In atoms. Einstein's coefficients. Conditions for lasing, states of population, population inversion, negative temperature. Optical pumping, ruby laser, rate equation in 3 level solid state laser in terms of probabilities. Electrical pumping, p-n junctions. Gas lasers, collisions of first and second kind. He-Ne laser, rate equations in single gas in terms of life-time states. Liquid lasers, chelates, neodymium selenium oxychloride, dye lasers, Q-switching. Mode structure, linear theory, cavity configuration, line broadening. Applications of lasers. SOLAR ENERGY: General overview, historical perspective. Solar energy utilization, flat plate collectors, solar cells, concentrating collectors, OTEC, Construction and operating principles of a solar collector. Optical characteristics, heat transfer characteristics, methods of calculating efficiency. Mathematical analysis of a solar collector as applied to a selected unit.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III

SEMESTER: 2

COURSE CODE: PHYS 3381

COURSE TITLE: MODERN PHYSICS II

NUMBER OF CREDITS: 4

**PREREQUISITE: PHYS 1110, PHYS 1111 AND
PHYS 2280, OR PHYS 1211, PHYS 1212, PHYS 1213,
PHYS 1214, PHYS 1215, PHYS 1216 AND PHYS 2280**

COURSE DESCRIPTION: Introduction to Quantum Mechanics: Evidence of inadequacy of classical mechanics. Brief review of the postulates of quantum mechanics and development of the underlying formalism. Fundamental principles and theorems. Heisenberg's uncertainty principle. Properties of wave functions and operators. Schrodinger's theory and applications to simple one-dimensional systems. Schrodinger's equation for the hydrogen atom and its solution. Elements of approximation techniques. Atomic Physics: spectrum of the hydrogen atom based on the Bohr model.

Transition rates and selection rules. Examples of Eigenfunctions and corresponding probability densities of the hydrogen atom. Electron spin hypothesis. Multielectron atoms. Behaviour of atoms in time-independent and time-dependent electric and magnetic fields Zeeman effects.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III

SEMESTER: 1

COURSE CODE: PHYS 3382

COURSE TITLE: ELECTRONICS & CONTROL THEORY

NUMBER OF CREDITS: 4

PREREQUISITE: PHYS 2282

COURSE DESCRIPTION: Multivibrators, Analogue System Building Blocks, Operational amplifier and applications, analog computer. Classical Control Theory: Introduction to control systems, modeling of control systems, mathematical representation of control systems, Laplace and Z-Transformations, transfer functions, canonical form. Measure of Performance: Stability, steady state accuracy, satisfactory transient response, satisfactory frequency response. Methods of Analysis such as Nyquist's, root locus and Bode analysis. Methods of Improving System Performance: Gain and phase compensation techniques.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III

SEMESTER: 2

COURSE CODE: PHYS 3383

COURSE TITLE: OPTICS AND ASTRONOMY

NUMBER OF CREDITS: 4

PREREQUISITE:

**PHYS 1110 AND PHYS 1111, OR PHYS 1211,
PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 AND
PHYS 1216**

Course Description: Optics: Fraunhofer and Fresnel diffraction and polarisation. Descriptive and quantitative considerations, applications. Astronomy: Observational instruments; celestial sphere and co-ordinate systems; solar system; Astrobiology; Stars and their evolution; Galaxies and cosmology.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III

SEMESTER: 2

COURSE CODE: PHYS 3384

**COURSE TITLE: THERMODYNAMICS AND
SOLID STATE PHYSICS**

NUMBER OF CREDITS: 4

PREREQUISITE:

**PHYS 1110 AND PHYS 1111, OR 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; Liquefaction of gases; Joule-Thomson effect; thermodynamic potentials; magneto-thermal relations; thermodynamic applications. Solid State: Structure of solids; elementary crystallography and crystal diffraction; free electron theory of metals; energy band theory; semiconductors; superconductivity.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III

SEMESTER: 1

COURSE CODE: PHYS 3385

**COURSE TITLE: ELECTROMAGNETIC
THEORY & APPLICATIONS**

NUMBER OF CREDITS: 4

**PREREQUISITE: PHYS 1110, PHYS 1111 AND
PHYS 2280, OR PHYS 1211, PHYS 1212, PHYS 1213,
PHYS 1214, PHYS 1215 AND PHYS 1216 AND
PHYS 2280**

COURSE DESCRIPTION: Electric fields In matter; polarization, the field of a polarized material; the electric displacement; linear and non-linear dielectrics. Magnetic fields In matter; magnetisation; the field of a magnetised material; the auxiliary field H. linear and non-linear media. Electrodynamics: Maxwell's equations; conservation laws (the continuity equation, Poynting's theorem, momentum); electromagnetic waves. Transmission lines: simple lossless system; Smith chart; transmission line matching. Wave guides: the parallel plane system; TE, TM and TEM modes; rectangular wave guides; resonators. Antenna Theory: Elementary theory of electric and magnetic dipole radiation. Practical radiating systems.

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III

SEMESTER: 1

COURSE CODE: PHYS 3387

COURSE TITLE: RESEARCH PROJECT

NUMBER OF CREDITS: 4

PREREQUISITE: AVAILABLE ONLY TO PHYSICS MAJORS

COURSE DESCRIPTION: A research project in some topic in Physics or a related area and may include experimental work in the laboratory and the field.

Assessment

A dissertation of up to 5000 words and an oral presentation.

Dissertation Report	40%
Performance	40%
Oral Presentation	20%

LEVEL: III
SEMESTER: 1
COURSE CODE: PHYS 3390
COURSE TITLE: FURTHER MEDICAL PHYSICS AND BIOENGINEERING
NUMBER OF CREDITS: 4
PREREQUISITE:
PHYS 1110 AND PHYS 1111, OR PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 AND PHYS 1216

COURSE DESCRIPTION: Biomechanics in orthopaedics and cardiac surgery. Biomaterials - focusing on the properties of implantable materials and their preparation for implantation. 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 - radioisotope tracer studies and system modeling. Radiation safety. Kinetic and blood flow studies.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III
SEMESTER: 2
COURSE CODE: PHYS 3391
COURSE TITLE: FURTHER DIGITAL ELECTRONICS AND MICROPROCESSOR SYSTEMS
NUMBER OF CREDITS: 4
PREREQUISITES: PHYS 2291

COURSE DESCRIPTION: Combinational Circuits: Adder, subtractor, multiplexer, de-multiplexer, encoder, decoders. Sequential Circuits: Registers, counters. Memories: Memory organisation (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.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III
SEMESTER: 1
COURSE CODE: PHYS 3392
COURSE TITLE: PHYSICAL OCEANOGRAPHY AND GEOHYDROLOGY
NUMBER OF CREDITS: 4
PREREQUISITES:
PHYS 1110 AND PHYS 1111, OR 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, problems of the oceans. Introduction to Geohydrology: Water bearing formations - Geohydrology of the Commonwealth Caribbean with special reference to individual Campus Territories. Groundwater flow - Darcy's Law, equation of continuity. Laplace equation. Well hydraulics. Aquifer characteristics storage and transmissibility coefficients. Barometer (Earthquake) and tidal variation, saline intrusions in coastal aquifers.

Assessment:

Coursework:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III

SEMESTER: 2

COURSE CODE: PHYS 3393

COURSE TITLE: EARTH MATERIALS, EARTH PROCESSES AND SEISMOLOGY

NUMBER OF CREDITS: 4

PREREQUISITES:

PHYS 1110 AND PHYS 1111, OR 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, minerals.

Introduction to Earth Materials: The origin, occurrence, world distribution and development of major earth resources - metalliferous and nonmetal ores, petroleum, coal building materials, chemical raw materials, bio mass resources. Earth Seismology: The nature of earthquakes; the propagation and detection of seismic waves; geographical distribution of earthquakes; surface effects of earthquakes, earthquake history of the Caribbean.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III

SEMESTER: 2

COURSE CODE: PHYS 3394

COURSE TITLE: FURTHER MATERIALS SCIENCE

NUMBER OF CREDITS: 4

PREREQUISITES: PHYS 2294

COURSE DESCRIPTION: Iron and Steel Making. Raw materials. Minimill process. Products. Microstructure and Properties of Iron and Steel. Transformations. Heat Treatment Testing. Destructive testing. Nondestructive testing. Microstructure of Polymers. Architecture. Crystallization. Mechanical and rheological Properties of Polymers. Viscoelasticity. Dynamic response. Microstructure of Composites. Mechanical and other Properties of Composites

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III

SEMESTER: 2

COURSE CODE: PHYS 3395

COURSE TITLE: THIN FILMS AND VACUUM PHYSICS

NUMBER OF CREDITS: 4

PREREQUISITES: PHYS 2294

COURSE DESCRIPTION: Thin Films: Methods of preparation of films. Growth and structure of films. Mechanical properties of films. Optical properties of films. Electrical properties of films. Thin film application. Vacuum Physics: The behaviour of gases in vacuum. The components of a vacuum system. Vacuum pumps: rotary, diffusion, etc. Turbo molecular pump, Getter-ion pump. Vacuum gauges: Pirani, Penning, McLeod's gauges. Vacuum coating system.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

LEVEL: III

SEMESTER: 1

COURSE CODE: PHYS 3396

COURSE TITLE: CERAMICS

NUMBER OF CREDITS: 4

PREREQUISITES:

PHYS 1110 AND PHYS 1111, OR PHYS 1211, PHYS 1212, PHYS 1213, PHYS 1214, PHYS 1215 AND PHYS 1216

COURSE DESCRIPTION: Typical properties and engineering applications; Crystal structures; Processing of Ceramics; Ceramic microstructures; Mechanical, thermal, electrical and magnetic properties; cements and concrete; Ceramic coating.

Assessment:

Theory Coursework	10%
Practical Coursework	30%
One 2-hour Final Examination	60%

Students must pass coursework

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

UNDERGRADUATE REGULATIONS & SYLLABUSES 2012 – 2013
THE FACULTY OF SCIENCE & TECHNOLOGY

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
- where in concurrence with the report's identification of evidence of Level 2 plagiarism, report the matter to the Campus Registrar; or
 - where not concurring in the identification of evidence of plagiarism, reply to the examiner declining to proceed further on the report; or
 - 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:
- the circumstances of the particular case;
 - the seniority of the student; and
 - 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:
- awarded a fail mark;
 - excluded from some or all further examinations of the University for such period as it may determine;
 - 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 detection 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 detection service.

NAME _____

SIGNATURE _____

NAME _____

SIGNATURE _____

NAME _____

SIGNATURE _____

DATE _____

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

COURSE CODE	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 2361	BIOL 2365
BIOL 2363	HUEC 2000 OR BIOL 2361
BIOL 2761	AGRI 1016
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

COURSE CODE	ANTI-REQUISITES
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 1140	INFO 1415 or MATH 1141 or MATH 1152
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 or MATH 2190
MATH 2190	ECON 2006 or MATH 2140 or MATH 2150
PHYS 1001	PHYS 3383
PHYS 1110	PHYS 1211 or PHYS 1213 or PHYS 1216
PHYS 1111	PHYS 1211 or PHYS 1212
PHYS 3294	CHMG 1003