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Campus Principal
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BA Northwestern, MA Chicago, PhD Penn

Deputy Campus Principal
Prof. Gurmohan Kochhar
BE Baroda, MS WIs, PhD UWI, MASHRAE, FAPE, MASME

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Dr. Margaret Rouse-Jones
BA UWI, MA John Hopkins, PhD John Hopkins,
Dip Library & Information Studies Lond
INTRODUCTION TO THE FACULTY OF SCIENCE & AGRICULTURE (FSA)

The Faculty of Science & Agriculture (formerly the Faculty of Agriculture & Natural Sciences) was established at the St. Augustine Campus of The University of the West Indies in 1996 from the merger of the former Faculties of Agriculture and Natural Sciences. The former was established in 1960 and continued the tradition of excellence in teaching and research of its predecessor, the Imperial College of Tropical Agriculture, while the latter was established at St. Augustine in 1972 from the former College of Arts and Science, which began teaching Chemistry, Mathematics and Physics in 1963. Today the FSA is among the largest in the University offering B.Sc. degrees with majors in Agriculture, Agribusiness Management, Biochemistry, Biology, Botany, Chemistry, Computer Science, Human Ecology, Environmental & Natural Resource Management, Mathematics, Physics and Zoology. In addition majors in Science may be combined with a major from another Faculty (e.g. Social Sciences) subject to Prerequisites and availability of places. The number of students registered in the FSA in 2003/04 was 1917 of which 1646 are undergraduates.

In addition the Faculty offers ten (10) M.Sc. programmes (including one by distance teaching) and M.Phil. and Ph.D. degrees are offered in each department. Undergraduate diplomas in Agricultural Extension and Institutional and Community Nutrition and Dietetics are also offered by the School of Agriculture.
UWI has entered into co-operative agreements with a number of overseas Universities which allow study abroad/exchange programmes for students. These include:

- York University;
- University of Toronto (Canada);
- University of Warwick (United Kingdom);
- Florida International;
- Florida State;
- University of Florida;
- University of Georgia;
- University of Wisconsin-Madison;
- Virginia Tech University
- Grand Valley State University
- Pacific Lutheran University

The exchange programme allows students to spend one or two semesters abroad in order to broaden their experience, understanding and perception of agriculture and/or science in a different environment. A wide range of courses are available including independent study projects.

**Arrangements**

UWI students, while at exchange Universities, continue as regular full-time students of The University of the West Indies. They pay UWI tuition and residence fees and pursue matching and/or approved courses for credit. Credits earned abroad are transferred to St. Augustine and applied to regular Faculty degree requirements.

FSA students wishing to participate in the exchange programme, must consult with the Faculty Co-ordinator for Exchange programmes, since prior approval from the Dean of the Faculty is required for the courses to be taken abroad.
OFFICERS & ADMINISTRATIVE STAFF OF THE FACULTY

PBX: 1 (868) 662-2002
Exts. 2112, 2113, 2596, 3525
FAX: 1 (868) 663-9686
e-mail: fansuwi@tstt.net.tt

OFFICE OF THE DEAN

Dean
Professor Dyer Narinesingh
BSc, PhD (UWI)

Deputy Dean,
School of Agriculture
Dr. I. Bekele
BSc (Addis Ababa),
MSc (Reading) PhD (Cornell)

Deputy Dean,
Graduate Studies and Research
Dr. Anderson R. Maxwell,
B.Sc., M.Sc. (UWI),
Ph.D. (Br. Col)

Deputy Dean,
School of Science
Dr. P. Umaharan
BSc (Peradeniya), PhD (UWI)

Deputy Dean,
Distance Education and Outreach
Dr. J. Seepersad
B.Sc., M.Sc. (UWI), Ph.D. (Illin.)

School of Agriculture Representative (Jamaica)
Mr. D.G. Hutton,
B.Sc. (UWI), M.Sc. (Cornell University), Dip. in
Nematology (Cent. University of Venezuela)

Senior Administrative Assistant
Mrs. M. Sobers, BA,
Dip. Pub. Adm. (UWI)

Administrative Assistant
Mrs Ann Pereira-Lowe

Dean’s Secretary
Mrs. B. Henry

Secretary
Mrs Tara Sookhoo

Accounting Assistant
Mrs. M. Claire Licorish

Clerical Assistant
Vacant

Clerical Assistant
Mrs. Laneta Raghunanan
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Dr. R. H. Singh
B.Sc., M.Sc., Ph.D. (Manitoba)

Subject Leader (Human Ecology)
Ms C. Rennie
BSc (McGill), MS (Missouri)

Head, Department of Food Production
Dr. G. Gouveia
B.Sc. (UWI), Ph.D. (UWI)

Head, Department of Life Sciences
Dr. G. Sirju-Charran
B.Sc., Ph.D. (UWI)

SCHOOL OF SCIENCE
Head, Department of Chemistry
Dr. A. Maxwell
B.Sc., M.Sc. (UWI), Ph.D. (Br. Col.)

Head, Department of Life Sciences and Subject Leader (Botany)
Dr. G. Sirju-Charran
B.Sc., Ph.D. (UWI)

Subject Leader (Biochemistry)
Dr. B. Cockburn

Subject Leader (Environmental Studies)
Dr. J. Agard

Subject Leader (Biology)
Dr. P. Umaharan

Subject Leader (Zoology)
Dr. C. K. Starr

Head, Department of Mathematics & Computer Science
Dr. B. Bhatt
B.Sc., M.Sc., Ph.D., (University of Rajasthan)

Head, Department of Physics
Dr. A. Achong
B.Sc., Ph.D. (UWI)
IMPORTANT DATES
2004/2005 ACADEMIC YEAR

SEMESTER I BEGINS
Orientation & Registration Week August 16 – 25, 2004
Teaching Starts Monday, September 6, 2004

Deadline Dates for Changes in Course Registration
ADD Courses September 17, 2004
DROP Courses (Withdrawal) September 24, 2004
Examination Period December 6 - 22, 2004
Semester I Ends December 22, 2004

SEMESTER II BEGINS
SEMINALY 16, 2005
Deadline Dates for Changes in Courses Registration
ADD Courses January 28, 2005
DROP Courses (Withdrawal) February 4, 2005
Semester Break March 27 - April 2, 2005
Examination Period April 27 - May 11, 2005
Semester II Ends May 13, 2005

GRADUATION DATES:
Cave Hill October 23 Oct., 2004
St. Augustine October 29 & 30, 2004
Mona November 5 & 6, 2004
FACULTY OF SCIENCE & AGRICULTURE (FSA)

GENERAL REGULATIONS

Degree of Bachelor of Science
Diploma in Institutional and Community Dietetics and Nutrition
Diploma in Agricultural Extension
University Certificate Programme in Agriculture

A. 1. The Faculty of Science & Agriculture (FSA) offers the following Certificate, Diploma and B.Sc. programmes:
   i. a Certificate programme in Agriculture (by distance teaching);
   ii. a Diploma in Agricultural Extension;
   iii. a B.Sc. in Agriculture;
   iv. a B.Sc. in Agri-business Management (face-to-face and distance);
   v. a B.Sc. General: Double Major in Agri-business and Management;
   vi. a B.Sc. in Human Ecology (with Specialisation in Nutrition & Dietetics, or in Consumer Sciences)
   vii. Diploma in Institutional and Community Dietetics and Nutrition;
   viii. a B.Sc. General Degree with a single major in a Science or Agriculture discipline, which may be taken together with one or two minors from the FSA or other Faculties;
   ix. a B.Sc. General with a double major in FSA disciplines or in one FSA discipline and a discipline from another Faculty;
   x. BSc in Chemistry and Management
   xi. BSc in Computer Science and Management

B. Qualifications for Admission
2. In order to be admitted to the B.Sc. (General), B.Sc. Agriculture, and B.Sc. Human Ecology degrees candidates must:
   
   EITHER a. i. satisfy the University requirements for normal matriculation (see UWI Calendar) and;
   
   ii. have obtained passes at CXC Secondary Education, General Proficiency level with Grade I or II, (or grade III obtained after June 1998) or equivalent, in Mathematics and English Language and two (2) subjects at GCE A-Level (or equivalent), in approved science subjects (See Appendix 1).
* For B.Sc Agriculture, Human Ecology, Chemistry & Management, and Computer Science & Management, only one of the two (2) A’ Levels need be in an approved science subject; For Computer Science & Management (Maths) and for Chemistry & Management (Chemistry).

**OR**

b. i. satisfy the University requirements for lower level matriculation;

ii. and have obtained passes at CXC Secondary Education, General Proficiency/Level with grade I or II (or grade III after 1998) or equivalent in Mathematics, English Language and two (2) approved Science subjects (see Appendix I); or

iii. have obtained a Diploma or Associate degree from an accredited Tertiary Level Institution in Agriculture, Home Economics, Food and Nutrition, Dietetics or Science with normally a minimum average mark of 60%; or other qualifications acceptable to the FSA.

N.B.: Candidates must also satisfy any relevant departmental regulations.

3. In order to be admitted to the Diploma in Agricultural Extension candidates must:

i. be graduates of an approved university; or

ii. have an approved technical or professional qualification from an approved institution; and have sufficient experience or other relevant qualifications which are deemed by the FSA to be adequate.

4. In order to be admitted to the Diploma in Institutional and Community Nutrition and Dietetics, candidates must have successfully completed:

i. A Bachelor’s Degree (no more than 5 years prior to application) with major credits in Clinical (Human) Nutrition, Foodservice Systems Management, and Community Nutrition, from an accredited Tertiary Level Institution.

ii. Applicants who do not qualify for entry as specified at (i) may be required to pursue supplementary Core and Professional courses at the University, to a minimum of 18 credits.

iii. Selection from suitably qualified applicants will be based on interviews.

5. In order to be admitted to the **B.Sc. Agri-business Management** degree Candidates must satisfy the University requirements for Normal Matriculation. (Passes in any two (2) A’ Level subjects)

C. Application Procedure

6. Applications for entry to the FSA should normally be received on or before January 31 of the year in which the applicant wishes to enter and should be accompanied by:

(i) official certificates giving details of all examinations passed;

(ii) a signed statement from parent or guardian, agreeing that the applicant shall become an undergraduate in the FSA;

(iii) a signed statement from parent or guardian, or from a responsible individual or authority that funds will be available for the payment of fees;

(iv) an application fee of $30.00 (Bds., EC, J or TT).

Application forms may be obtained from the Registry - Mona, St. Augustine or Cave Hill or from the Resident Tutors in non-campus countries.

Late applications may be accepted on the payment of a late application fee of $40.00.
D. Outline of the Degree Programme

7. The degree of B.Sc. is awarded on the basis of a programme of studies selected from courses in Agriculture and/or Science disciplines listed in Appendix II, together with certain Foundation courses and a number of approved courses from other Faculties.

8. The following types of courses which may consist of both theoretical and practical components are offered:

   a. Courses taught by FSA or other Faculties which include Preliminary courses, Level I (or Introductory) courses, and Level II (or Advanced) courses.

   b. Service courses, which provide students with basic techniques and skills.

   c. Foundation courses (see Appendix III) which are University courses designed to augment the general education of students.

   Students wishing to register for courses offered by other Faculties must have prior approval of the Dean.

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

10. In order to be eligible for the award of the B.Sc. degree, candidates admitted to Level I must:

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

   b. have obtained passes in Levels I and II, and Foundation Courses amounting to the numbers of credits shown below:

<table>
<thead>
<tr>
<th>DEGREE</th>
<th>CORE</th>
<th>NO. OF CREDITS ELECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level I</td>
<td>Level II</td>
</tr>
<tr>
<td>Agriculture (General)</td>
<td>30</td>
<td>52</td>
</tr>
<tr>
<td>Agri-business</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) FSA Stream</td>
<td>29</td>
<td>59</td>
</tr>
<tr>
<td>(ii) FSS Stream</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Human Ecology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Nutr. &amp; Dietetics</td>
<td>28</td>
<td>61</td>
</tr>
<tr>
<td>(ii) Consumer Sciences</td>
<td>29</td>
<td>67</td>
</tr>
<tr>
<td>B.Sc. General</td>
<td>24</td>
<td>60</td>
</tr>
<tr>
<td>Chemistry and Management</td>
<td>30</td>
<td>62</td>
</tr>
</tbody>
</table>

   * These include Level I / Level II courses
   ** See Appendix III
   *** For students reading for a double majors including the New Applied Science majors, these numbers may vary

   c. For degrees including a major in a discipline from another Faculty the numbers of credits required may vary from the above.

   d. Exemptions from specific parts of the degree programme may be obtained under the provision of Section I.

11. In order to be awarded the B.Sc. (General) degree candidates must complete the requirements for a single major in a Science or Agriculture Discipline (See Appendix V).

Candidates may however:

   a. choose to complete the requirements for two FSA majors, or a single FSA major and a major from another Faculty for a double major;

   b. or a single FSA major and one or two minors from the FSA or another Faculty.

A List of FSA minors is given in Appendix VI.

12. Candidates not pursuing the B.Sc. General Degree may choose one of the special degrees.

13. Candidates will not be granted credits for the same course under two (2) different majors/minors.
E. Registration

14a. A candidate pursuing a degree in the Faculty may register as a full-time student or as a part-time student but may change the status of his/her registration. A candidate who is in full-time employment may only pursue a degree on a part-time basis. Permission for this will depend on submission to the Dean, of a certificate prepared by the Faculty and signed by the candidate’s employer, stating that the candidate will be given the necessary release throughout the period of registration. Full-time students may take employment for not more than 12-hours per week without losing their full-time status. Teaching and Research Assistants shall be registered as part-time students. A student who is employed for more than 12-hours per week shall be registered as a part-time student.

14b. Candidates may register for courses at the beginning of each semester. Changes in registration must be effected up to the end of the third week for semester I courses and the end of the second week for semester II courses.

15. a. A student is deemed to have registered for a course once his/her financial obligations to the University have been fulfilled.

b. Registration for any course constitutes registration for the associated examination, and a student will therefore be deemed to have failed the course if he/she does not attend the examination without having previously been allowed to withdraw from the course (see Reg. 16), or without having tendered evidence of illness at the time of the examinations certified by a medical practitioner recognized by the University. In the latter case, the medical certificate must be received by the Campus Registrar no later than seven (7) days after the date of the examination concerned.

16. A candidate registered for a course may withdraw from it by submitting a Change of Registration Form to the Assistant Registrar (Student Affairs) through the Dean. In the absence of exceptional circumstances, such notification must be received by the Dean by the end of the fourth week of the semester in which the course is offered.

17. a. A candidate who has passed a course will not be permitted to re-register for that course.

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

F. Progress Through The Programme

18. a. Before being allowed to register for any Level I courses, candidates admitted to the programme under Reg. 2(b) must normally have passes in two A-Levels or Preliminary courses equivalent to 24 credits spread equally over any two of the subjects Biology, Chemistry, Mathematics or Physics. However, if such a candidate already possesses one (1) GCE A-level pass (or equivalent) in an approved science subject, that candidate may gain exemption from the relevant Preliminary courses equivalent to 12 credits, and may be allowed to register for 12 credits of Level I courses. Such courses if passed will be credited towards the requirement for the degree (Reg. 7).

b. Candidates admitted to the programme under Reg. 2(a) may also register for Preliminary courses equivalent to twelve (12) credits in Biology, Chemistry, Mathematics or Physics for the purpose of obtaining Prerequisites for entry to level I or II courses.

19. a. Full-time and part-time candidates admitted to the programme under Reg. 2, are required to register for Level I Faculty courses equivalent to a minimum of fifteen (15) or six (6) credits respectively per semester, in addition to the Foundation courses.

b. In order to satisfy the minimum requirement for entry to Level II, a candidate must normally record passes in Level I courses equivalent to a minimum of twenty-four (24) credits in Faculty courses.
c. A candidate who has obtained passes in Level I Faculty courses equivalent to **eighteen (18)** credits in the first two (2) semesters of full-time study may, on the recommendation of the Dean and subject to Reg. 18, may be allowed to register for a limited number of Level II courses.

d. Exemptions from some courses may be obtained on the basis of the Regulations contained in Section K.

20. The maximum number of credits (including those from foundation courses) for which a candidate may normally register in any semester is as follows:

   a. In the case of candidates who have not satisfied the requirements of Reg. 19(b)
      
      i. **twenty-one (21)** credits subject to a maximum of **eighteen (18)** credits from Faculty courses, if the candidate is registered full-time;

      ii. **twelve (12)** credits if the candidate is registered part-time.

   b. In the case of candidates who have satisfied the requirements of Reg. 19(b)
      
      i. **twenty-three (23)** credits subject to a maximum of **twenty (20)** credits from Faculty courses, if the candidate is registered full-time;

      ii. **twelve (12)** credits if the candidate is registered part-time.

   c. Full-time candidates who require not more than twenty-four (24) credits in order to graduate, have satisfied all Foundation course requirements, and are exempted from coursework in at least one course, may be allowed to register for twenty-four (24) credits of Faculty courses.

   d. Students pursuing the B.Sc. degrees in Agriculture and Agri-business Management may be allowed to transfer to one or more of the Majors listed in Appendix V after having successfully completed Year I, while students pursuing one or two majors may be allowed to transfer to the Agriculture or Agri-business Management degree after Year I.

G. Examinations

21. In order to pass a course, a candidate must have been in satisfactory attendance at the course, and must have satisfied the examiners in the associated examinations.

22. 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 in which the candidate has registered for the courses concerned. However, oral examinations as well as performance in course work 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. (See Appendix VII for grading scheme).

23. 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. On the basis of performance in the practical part of the course, candidates may, on the recommendation of the Department concerned, be exempted from the practical part of the examination.

24. A candidate who fails the examination associated with FSA courses may, as a concession, be granted permission by the Board of Examiners to sit a Supplemental Examination. Such permission will be given on the basis of the performance of the candidate in the courses concerned. Supplemental examinations however are not conducted for Level II Science courses.

25. a. A candidate who is (potentially) able to complete the requirements for graduation at the end of a semester or the succeeding semester may be granted permission by the Board of Examiners to sit supplementary oral examinations in failed courses accounting for not more than eight (8) credits provided that the candidate was awarded
a minimum of 35% in the final examinations. Such oral examinations may not be restricted to the questions set in the examinations.

b. Candidates passing such oral examinations will be awarded a mark of 40% and will not have any right of appeal or review if the result of the oral examination is a fail.

c. Candidates offered oral examinations may choose to decline the offer.

d. Two oral examinations in the same course will be counted as being equivalent to oral examination in two separate courses.

26. A candidate who fails the examination associated with a course may be given permission to repeat the course and the examination on a subsequent occasion. In the event that such a candidate has satisfied the examiners in the practical coursework, the candidate may, on the recommendation of the relevant Department, be exempted from the practical coursework, on that occasion. If such a recommendation has been made, the candidate may apply to the Dean for permission to take the examination without attending the course.

28. Failure on a previous occasion in courses used in determining the class of honours will result in down-grading in the class of honours as follows:

a. by one (1) (sub-) class, if the failed courses account for more than eight (8) credits;

b. by two (2) (sub-) classes, if the failed courses account for more than fifteen (15) credits;

c. to a pass degree if the failed courses account for more than twenty (20) credits.

For the purposes of this Regulation, repeated failures in the same course will be counted as if they were associated with different courses.

H. Class Of Degree Awarded
(for students registered before 2003/04)

27. First Class Honours, Second Class Honours (Upper and Lower Division), or a Pass will be awarded on the basis of marks obtained in the examination in courses as follows:

a. the B.Sc. General with a single major courses amounting to a candidate’s best sixty-four (64) credits of the degree programme, including:

i. at least thirty-two (32) from Level II courses in the candidate’s major;

ii. not more than six (6) credits from Level I FSA courses;

iii. and the Level II credits from courses required for any declared minors.

b. for a double major – courses amounting to:

i. Sixty-four (64) credits from Level II courses, including the courses required for the major in each of the two disciplines; or

ii. Sixty-four (64) credits from a single Science discipline which must include the thirty-two (32) credits for the single major in that discipline.

c. for the B.Sc. Agriculture, Agri-business Management and Human Ecology degrees courses amounting to a candidates best sixty-four (64) credits of Level II courses, six (6) of which may be replaced by FSA Level I courses.

I. Leave Of Absence

29. a. A candidate who for good reason wishes to be absent from the Faculty for a semester or more must apply for Leave of Absence to the Faculty Board through the Dean, stating the reasons for the application.

b. Leave of Absence will not be granted for more than two (2) consecutive semesters in the first instance. However, candidates may re-apply for an extension of leave.
c. Leave of Absence will not be granted for more than four (4) consecutive semesters.

d. Applications for Leave of Absence for a semester or for an academic year should normally be submitted by the end of the third week of the relevant semester, or Semester I respectively.

30. A candidate who fails to register for any courses during a semester without having obtained Leave of Absence will be deemed to have withdrawn from the Faculty, unless no course is available to the candidate in that semester.

J. Time Limits For Completion (And Enforced Withdrawals)

31. For the purposes of Regs. 32, 33 and 34 any semester in which a candidate is registered part-time will be counted as half of a full-time semester. After the total of equivalent full-time semesters has been obtained in this way it will be rounded down to the nearest whole number.

32. Candidates admitted to the programme under Reg. 2(a) or 2(b) iii:

a. shall complete the requirements for the degree in a minimum of six (6) or a maximum of ten (10) semesters of full-time study.

b. Candidates who cannot complete the programme within the maximum periods given in (a) above will be required to withdraw from the Faculty as soon as this has been determined.

33. Candidates are normally required to satisfy the minimum requirements for entry to Level II, as stipulated in Reg. 19, within a maximum period equivalent to four (4) semesters of full-time study after admission to Level I.

34. Candidates will normally be required to withdraw from the Faculty if in two (2) successive semesters, they fail to gain passes in Faculty courses equivalent to at least:

35. For the purposes of Regs. 32, 33 and 34 any semester for which a candidate has obtained Leave of Absence will not be counted.

36. In the event that a candidate has exhausted the maximum periods mentioned in Reg. 32 above, but still requires for the completion of the degree programme:-

Either
a. passes in courses equivalent to no more than eight (8) credits,
Or
b. passes in Foundation Courses, only

the Dean may, after consultation with the appropriate Heads of Departments, recommend to Academic Board an extension of the period of study by one (1) or two (2) semesters.

37. Notwithstanding Regs. 32, 33 and 34 above, the Academic Board of a candidate’s campus may, on the recommendation of the Faculty Board concerned, require the candidate to withdraw from the Faculty at the end of any semester on grounds of persistent neglect of work and/or repeated failure in examinations.

38. A candidate who has been required to withdraw from the Faculty may be readmitted to the Faculty after at least one year has elapsed since their withdrawal.

39. Students who are readmitted to a faculty may in accordance with the regulations, be granted exemption from Level I and II courses, subject to there being no change in the content of the courses and provided that no more than five (5) years have elapsed since the date of withdrawal. Students required to withdraw from the Faculty, and who are granted exemption for Level II courses will be required to take at least a full load for one (1) year.
40. For all re-entry students the time limit for the award of honours will be determined at the time of re-entry and pro-rated according to the amount of credits given for previously passed courses.

K. Exemptions And Transfers
41. Exemptions from Level I and/or specific Level I and II courses, and credits for such courses may be granted to graduates of approved Tertiary Level Institutions who hold Diplomas or Associate Degrees in Agriculture, Home Economics, Food and Nutrition, Dietetics or Science (see Appendix VIII) or to Holders of (a) a degree from an approved University, or candidates who have partially fulfilled the requirements for such degrees and (b) holders of other Associate degrees may apply to the Board of Undergraduate Studies, through the Faculty Board of the candidate’s campus for exemption from Level I and/or Level II courses. Each such application will be considered on its own merit.

42. a. Candidates on transfer between different B.Sc. degree programmes or from other programmes of study within the University may, on the basis of passes already obtained, and on the recommendation of the Departments concerned, be exempted from some or all of the Level I courses and some of the Level II courses.

b. Candidates exempted from all Level I courses may complete the degree in a minimum of four (4) or a maximum of eight (8) semesters of full-time study from the time of transfer.

c. Candidates exempted from all of the Level I courses and some Level II courses may complete the degree in a minimum of two (2) semesters of full-time study from the time of transfer.

d. In the case of (c) above the time limit for the award of the degree will be pro-rated according to the amount of credit given for previously passed courses.

L. Aegrotat Degree
43. 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 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 appropriate 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 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 (i) above arise from courses making up the candidate's major.

d. The Aegrotat Degree will be awarded without Honours or Class.
REGULATIONS FOR THE DIPLOMA IN INSTITUTIONAL AND COMMUNITY DIETETICS AND NUTRITION

A. Qualifications For Admission
1. In order to be admitted candidates must have successfully completed:
   
   i. A Bachelor’s Degree (no more than 5 years prior to application) with major credits in Clinical (Human) Nutrition, Foodservice Systems Management, and Community Nutrition, from a University or College acceptable to The University of the West Indies, St Augustine.
   
   ii. Applicants who do not qualify for entry as specified at 1(i) may be required to pursue supplementary Core and Professional courses at the University, to a minimum of eighteen (18) credits.
   
   iii. Selection from suitably qualified applicants will be based on interviews.
   
   iv. The Programme will consist of the following COURSES

   **SEMESTER I**
   HUEC 500 (AH51A):
   Advanced Foodservice Systems Management (4)
   HUEC 501 (AH51P):
   Foodservice Systems Management Practicum (8)

   **SEMESTER II**
   HUEC 502 (AH52B):
   Advanced Clinical Nutrition (4)
   HUEC 503 (AH52P):
   Clinical Nutrition Practicum (8)

   **SEMESTER IV**
   HUEC 504 (AH53C):
   Advanced Community Nutrition (4)
   AH 53P: Community Nutrition Practicum (8)

   *Numbers in parenthesis indicate the number of credits. One credit hour is one (1) lecture hour or three (3) practical hours per week in any one semester.

   v. For the practical courses HUEC 501 (AH51P), HUEC 503 (AH52P), HUEC 505 (AH53P), in-course assignments will contribute 100% to the total marks for the course.
B. Enforced Withdrawal And Resits
   2. i. Candidates who fail four (4) or more courses will be required to withdraw from the programme.

   ii. Candidates marginally failing three (3) or less courses will normally be allowed a supplementary examination in these courses.

   iii. Candidates who fail no more than two (2) courses may be allowed to register for those courses as a final attempt.

C. Requirements For Graduation
   3. i. The Diploma in Institutional and Community Dietetics and Nutrition will be awarded on successful completion of all courses.

   ii. The Diploma will be awarded with distinction to candidates whose overall average is 70% or greater.

REGULATIONS FOR THE DIPLOMA IN AGRICULTURAL EXTENSION 2004/2005
This programme will be offered subject to a minimum registration of ten (10) students. The course of study for the Diploma in Agricultural Extension is offered over one (1) academic year of full-time study, and consists of lectures, seminars and practical assignments along with field research which can be conducted in any Caribbean country.

A. Qualifications For Admission
   1. In order to be admitted candidates must:
      a. be graduates of an approved University; or

      b. hold a technical or professional qualification awarded by an approved Tertiary Level Institution in addition to practical experience or other qualifications of special relevance to the course of studies.

B. a. Outline Of The Programme
   1. Candidates will be awarded the diploma on successful completion of all the core courses listed below and one of the two elective courses:

   **CORE COURSES**
   - AGEX 5001 (AX502) Community Analysis
   - AGEX 5002 (AX503) Extension Philosophy and Principles
   - AGEX 5003 (AX504) Communications Theory and Practice
   - AGEX 5004 (AX505) Current Issues in Agricultural & Rural Development
   - AGEX 5005 (AX506) Field Research Project

   **ELECTIVE COURSES**
   - AGEX 5006 (AX507) Managing Extension for Agricultural and Rural Development
   - AGEX 5008 (AX508) Rural Social Systems
REGULATIONS FOR THE UNIVERSITY CERTIFICATE PROGRAMME IN AGRICULTURE (UCPA)

Preface

The UCPA by distance teaching offers:

a. a **Certificate in Tropical Agriculture (CTA)** which is targeted at post secondary school candidates with limited work experience; who wish to matriculate into the Agribusiness Management or General Agriculture degrees offered by the FSA;

b. and a **Certificate of Specialisation in Tropical Agriculture (CSTA)** which is designed to fulfil the training needs of middle managers and other professionals in the Agri-food, Agro-environment and Education sectors, who have a Diploma or Bachelor’s degree and after years of work experience wish to upgrade their knowledge, or require certification in a specialised area.

1. Qualifications for Admission to the CTA and CSTA

   a. In order to be admitted to the **CTA**, candidates must:
      
      i. *Satisfy the lower level matriculation requirement of the University* (5 CXC/GCE O’Level passes including English language and Mathematics),
      
      ii. *Have practical experience or other qualifications deemed acceptable by the Faculty and University,*
      
      iii. *Have relevant training or work experience in the agri-food sector.*

   b. In order to be admitted to the **CSTA**, candidates must:
      
      i. *Satisfy the normal matriculation requirements of the University,*
      
      ii. *Have obtained a Diploma in Agriculture or B.Sc. Degree from a recognised tertiary level institution.*

   c. Mature Students: Candidates who do not satisfy the above requirements but who have had considerable experience and who are deemed capable of achieving the standard of work required for the CSTA may be permitted to enter the CSTA programme at the discretion of the Faculty and University.
2. Outline of the UCPA Programme
   a. The following certificates are offered in the UCPA:
      • Course Certificates for individual courses;
      • Certificate in Tropical Agriculture (CTA);
      • Certificate of Specialisation in Tropical Agriculture (CSTA).
   b. The CTA is awarded on completion of four (4) core
      and four (4) basic courses, while the CSTA is awarded
      on completion of four (4) basic and four (4) advanced
      courses in one of the areas of Specialisation
      respectively (see Tables 1 and 2).
   c. Courses normally extend over one (1) semester and
      all courses are four (4) credits in weight.

UCPA Courses
The UCPA consist of twenty-three (23) courses including four
(4) core; eight (8) basic and eleven (11) advanced courses. Other
courses may be added to the programme as the need arises.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU41A</td>
<td>Agroecology &amp; Sociology of Caribbean Rural Systems</td>
</tr>
<tr>
<td>AU41B</td>
<td>Tropical Crop and Livestock Production Systems</td>
</tr>
<tr>
<td>AU41C</td>
<td>Food Science, Technology and Food Utilisation</td>
</tr>
<tr>
<td>AU41D</td>
<td>Business &amp; Resource Management in Caribbean Agriculture</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU42A</td>
<td>Marketing Theory, Research &amp; Practice</td>
</tr>
<tr>
<td>AU42B</td>
<td>Basic Economic Principles, Practices &amp; Applications</td>
</tr>
<tr>
<td>AU42C</td>
<td>Agricultural Production &amp; Commercialisation</td>
</tr>
<tr>
<td>AU42D</td>
<td>Business Management for Agricultural Enterprises</td>
</tr>
<tr>
<td>AU42E</td>
<td>Agricultural Waste Management</td>
</tr>
<tr>
<td>AU42F</td>
<td>Land Resource Protection</td>
</tr>
<tr>
<td>AU42G</td>
<td>Communication Skills for Extension Workers</td>
</tr>
<tr>
<td>AU42H</td>
<td>Basic Principles &amp; Key Practices for Extension</td>
</tr>
</tbody>
</table>

ADVANCED COURSES
- AU43A  Marketing Planning and Management
- AU43B  International Marketing & Quality Assessment
- AU43C  Food Quality and Food Sanitation Management
- AU43D  Economic and Agricultural Development
- AU43E  Financing Agricultural Enterprises
- AU43F  Agro-tourism & Agro-environmental Linkages for Development
- AU43G  Sport Field and Turf Grass Management
- AU43H  Management of Community Parks and Green Spaces
- AU43I  Pollution and Protection of Water Resources
- AU43J  Development Extension Programmes Using Participatory Approaches
- AU43K  Methods in Teaching Agriculture

Table 1: UCPA Courses for the CTA and CSTA

<table>
<thead>
<tr>
<th>Specialisation</th>
<th>Compulsory Courses</th>
<th>Compulsory Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and Agricultural Marketing</td>
<td>AU42A &amp; AU42B</td>
<td>AU43A &amp; AU43B</td>
</tr>
<tr>
<td>And any other two Basic Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>And any other two Advanced Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agri-business Management</td>
<td>AU42C &amp; AU42D</td>
<td>AU43D &amp; AU43E</td>
</tr>
<tr>
<td>And any other two Basic Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>And any other two Advanced Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agro-environmental Management</td>
<td>AU42E &amp; AU42F</td>
<td>AU43F &amp; AU43I</td>
</tr>
<tr>
<td>And any other two Basic Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>And any other two Advanced Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural Development, Communication and Education</td>
<td>AU42G &amp; AU42H</td>
<td>AU43J &amp; AU43K</td>
</tr>
<tr>
<td>And any other two Basic Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>And any other two Advanced Courses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Courses for the CSTA Specialisation Areas
Course Exemptions
Students may be granted exemption(s) from basic courses upon presentation of the relevant transcript and Syllabus: of equivalent courses pursued at an institution recognised by The UWI. Requests should be made in the appropriate section of the application form.

Exemptions will be based on the candidate’s current training and experience in the area and the level and grade(s) attained in the equivalent courses. Candidates will not normally be allowed exemptions from advanced courses.

3. Period of Study and Exemptions
3.1 The minimum and maximum periods allowed for completion of the CTA and the CSTA shall normally be two (2) and five (5) academic years respectively.

3.2 Students who have not completed the CTA or the CSTA by the end of the fifth academic year will normally be required to withdraw.

3.3 Candidates with a two (2) year Diploma in Agriculture or a B.Sc. degree from an institution recognised by the University may be exempted from the basic courses of the CSTA, and if so exempted, will be allowed to complete a CSTA in a minimum of one (1) academic year.

3.4 In special cases, students who have not completed the requirements within the prescribed maximum period and who need one or two courses to graduate may apply for an extension of time. Such cases will be determined on an individual basis.

4. Registration
4.1 Students must normally register for courses within the first four (4) weeks of the semester.

4.2 Students may normally register for a maximum of two (2) courses, in any one (1) semester.

4.3 A student who has recorded a pass in a course will not be permitted to re-register for that course.

4.4 Registration for a course includes registration for the associated examination. Any student who, having registered for a course and examination, fails to take the examination shall be deemed to have failed the examination unless:

   i. Prior approval was given for the student to withdraw from the examination by the Dean, Faculty of Science & Agriculture;

   or

   ii. He/she could not attend because of illness or other grave cause. In the case of illness, a medical certificate must be submitted to the Dean’s Office with ten (10) days of the specific examination.

5. Withdrawal from Courses
5.1 A student wishing to withdraw from a course must apply in writing to the Dean, Faculty of Science & Agriculture for permission to do so. Such applications must be received by the end of the 8th week after the start of teaching in any given semester. In such cases the candidate must take the examination in the following academic year and will be allowed to do so without penalty. Deferral of the examination in a course will not normally be allowed on more than one occasion.

5.2 Students will not be permitted to repeat a failed course more than once, but may register for another course, subject to the permission of the Board of Examiners of the UCPA and provided that the maximum time is not exceeded.

6. Upgrading from the CTA to the CSTA
6.1 Students who have completed the requirements for the CTA may apply to upgrade their registration to one specialisation in the CSTA.

6.2 In the event that such students are unable to complete the requirements for the CSTA, Faculty certificates will be awarded for advanced courses completed.
7. Examinations

7.1 Each UCPA course will be examined by a two (2) hour written paper held at authorised University Centres.

7.2 In order to satisfy the examiners, candidates must obtain a minimum mark of 40% in each course.

7.3 Candidates will not normally be permitted to repeat a course more than once.

7.4 A student who fails a course twice may be permitted by the Board to read a substitute course.

7.5 Students taking written Examinations shall be subject to the University Examination Regulations for First Degrees, Diplomas and Certificates save that the functions assigned to the Campus Committee on Examinations shall be performed by the Senior Assistant Registrar, Examinations or nominee.

For further information, please contact:

The Programme Officer
University Certificate Programme in Agriculture
Faculty of Science & Agriculture
The University of the West Indies
St. Augustine, Trinidad & Tobago

Tel No: (868) 662-3719/2686
Direct Dialling: (868) 645-3232-9
 ext. 2318/3322/3327
Fax No: (868) 662-1182, 663-9686
Email: cpa@cablenett.net
REGULATIONS GOVERNING THE FSA SUMMER PROGRAMME

THE SUMMER SCHOOL
The FSA offers remedial courses for students who are repeating lab-based and/or non lab-based courses. Students may be allowed to take full courses that are non lab-based in the Summer for the first time. The maximum number of credits for which a student may register in Summer is normally eight (8).

A. Eligibility For Admission To The Summer School
1. The following persons are eligible for admission to the Summer School:-
   i. Registered students of the University who have not yet completed the requirements of the degree, diploma or certificate programme for which they are registered.
   
   ii. Students of the University who have been granted (a) leave of absence for Semester I and/or Semester II or part thereof preceding the summer School or (b) deferral of entry.
   
   iii. Other persons, not students of the University who:
       
       a. satisfy the normal or lower level matriculation requirements of the University, as well as the Departmental requirements such as Prerequisite courses, or

       b. are admitted at the discretion of the Dean.

B. Applications
2. The deadline date for application to the Summer School shall normally be May 26.
C. Registration
3. i. Summer School Students shall be required to pay the appropriate fees and to complete and submit their registration forms to the Registry no later than May 31.

ii. In cases where results are declared after May 31, students may be permitted to register up to the end of the 2nd week of the Summer School session.

iii. The maximum number of credits for which Summer School students may normally be permitted to register is nine (9) credits. Registration for a course offered in the Summer School implies registration for the examination for that course.

v. Summer School students may apply for a change of registration by submitting a Change of Registration (add/drop) Form to the Registry no later than the end of the 2nd week of the Summer School session.

D. Examinations
4. i. Examinations for courses taught in the Summer School shall be conducted in accordance with the University Examination Regulations.

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

E. Application For Withdrawal
5. i. Summer School students may apply to withdraw from a course or courses by writing to the Dean/Assistant Registrar.

ii. Applications for withdrawal from a course must reach the Campus Registrar no later than two (2) weeks after teaching has begun. A penalty will be instituted as follows:

   a. 25% of the fees up to the end of the 1st week of teaching
   b. 30% of the fees up to the end of the 2nd week.

F. Award Of Credit/Exemption
6. i. 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.

ii. Registered students of the University including those on approved leave of absence shall be given credit for courses successfully completed at the Summer School. Unless they register expressly not for credit, students may not subsequently have such credit altered.

iii. Persons admitted under Regulation 1 (iii), 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).

iv. Students who do not satisfy the normal matriculation requirement may not use the credits gained in Summer School for both matriculation and credit towards a degree.

v. Participation of students in the Summer session shall be optional.
APPENDICES

APPENDIX I
Approved Science GCE A-level Subjects:
- Biology: Applied Mathematics
- Botany: Pure Mathematics
- Chemistry: Mathematics
- Computer Science: Physics
- Geography: Zoology
- Geology

APPENDIX II
FSA Disciplines:
- Agriculture: Agricultural Extension
- Agri-business: Agricultural and Natural Resource Economics
- Biochemistry: Environmental and Natural Resources Management
- Biology
- Botany: Nutrition and Dietetics
- Chemistry: Post Production Technology
- Computer Science: Horticulture
- Mathematics: Zoology
- Physics

APPENDIX III
Foundation Courses: (to be taken by FSA students)

FD11B - Academic writing for different disciplines
FD11A - Caribbean Civilisation
FD13A - Law, Governance, Economy and Society

Any other course approved for the purpose by the Board of Undergraduate Studies.

The Prerequisite for entry into FD10A and FD11B is any one of the following:

- CXC English Language Grade I (General Proficiency)
- General Paper Grade A or B
- A Pass in the English Language Proficiency Test
- A Pass in English as a Foreign Language (Intermediate)
FD11A
CARIBBEAN CIVILISATION (SEMESTER I)
(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%

FD11B
ACADEMIC WRITING FOR DIFFERENT DISCIPLINES (SEMESTER II)
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.

OPTIONS
Option A
Writing about Literature (Compulsory for Literatures in English Majors)
Critical Reading
Writing the Critical Analysis

Option B
Argument and Report Writing
Report Writing
Logical Argument

Option C
Scientific and Technical Writing
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.

* Highly recommended for students in the Faculty of Science & Agriculture.

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 (2) warnings any further absence without prior permission or an acceptable medical certificate will result in automatic exclusion from the examination.
FD12A
SCIENCE, MEDICINE AND TECHNOLOGY IN SOCIETY (SEMESTERS I AND II)
(not offered to FSA students)
This course is intended to develop the ability of the student to engage in an informed manner in public discourse on matters pertaining to the impact of science, medicine and technology on society. The course material is divided into two modules, Module 1 being The Nature, Importance and Methodology of Science and Module 2 being The Impact of Science on Society in General and on Caribbean Societies in Particular.

The course is delivered primarily by means of a student manual. In addition, there is one plenary lecture and scheduled tutorial classes. Supporting material is also available on WEBCT. Assessment is based on two examinations, one in week 7 and the other in week 14 of the semester. Each of these examinations will consist of one or more structured questions and one essay question (selected from 4 or 5 alternatives). A pass will be determined by the aggregate grade of the two examinations.

SEMESTER I and II

FD13A
LAW, GOVERNANCE, ECONOMY AND SOCIETY
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 (1) question in any one section.

APPENDIX IV
LEVEL I PREREQUISITES FOR THE APPLIED SCIENCE MAJORS

1. Agricultural Science
   Prerequisites
   a. Agricultural Science Major
      AGBC 1000 [AP10B], MICR 1001 [AG13B], AGRI 1005 [AG16B], AGRI 1004 [AG15B], AGSL 1000 [AS16B], AGBC 1001 [AP13B], AGLS 1000 [AL13B], AGRI 1003 [AG14C].
   b. Agri-business Major
      AGRI 1005 [AG16B], AGBU/AGEC 1002 [AM17B], AGSL 1000 [AS16B], AGRI 1003 [AG14C], AGRI 1004 [AG15B], MS15E, AGRI 1000 [AG133]

2. Environmental & Natural Resource Management Major
   BIOL 1462 [BL11G], BIOL 1065 [BL12A], AGSL 1000 [AS16B], AGBU/AGEC 1000 [AM13A], AGBU/AGEC 1002 [AM17B], MICR 1001 [AG13B].

APPENDIX V
REQUIREMENTS FOR MAJORS

1. Agricultural Science

2. Agri-Business
   The requirements for major in Agri-Business are:- AGBU 2002 (AM23B), AGBU 2000 (AM21A), AGBU 3000 (AM30C), AGBU 3008 (AM39C), AGBU 3012 (AM312) MS21B, MS20A, MS22A, MS28D.

   The major in Agribusiness can be combined with a variety of minors including Entrepreneurship, Economics, and International Relations

   Double major in Agribusiness and Management
   A Double Major in Agribusiness and Management is available through the Distance Education Programme
3. **Chemistry**  
The requirements for a major in Chemistry are:-  
i. CHEM 2160 (C20A), CHEM 2260 (C20B), CHEM 2360 (C20C), CHEM 2015 (C20D), CHEM 2025 (C20E).  
ii. Twelve (12) credits from CHEM 3000 (C30) level courses which must include at least eight (8) credits from CHEM 3160 (C30A), CHEM 3260 (C30B) CHEM 3360 (C30C.).

4. **Life Sciences**  
**Biochemistry**  
1. BIOL 2361 (BC22A), BIOL 2362 (BC22B), BIOL 2363 (BC23A), BIOL 2364 (BC23B), BIOL 3361 (BC33A), BIOL 3362 (BC38B) and BIOL 3061 (BL38C)  
2. Four (4) credits of elective courses from BIOL 3069 (BL33B), BIOL 3364 (BC38J), BIOL 3062 (Z36B), BIOL 3069 (BL33B), BIOL 3062 (Z36B), BIOL 3069 (BL33B), BIOL 3364 (BC38J).

**Biology**  
BIO 2361 (BC22A), BIOL 2162 (BL27B), BIOL 2261 (BL28C), BIOL 3662 (BL36B), BIOL 3061 (BL38C), BIOL 3062 (Z36B), BIOL 2761 (BT27A), and BIOL 2862 (Z21F).

**Botany**  
1. BIOL 2761 (BT27A), BIOL 2261 (BL28C), BIOL 3761 (BT31C), BIOL 2162 (BL27B), BIOL 3464 (BT37E) and BIOL 3662 (BL36B),  
2. Eight (8) credits of electives courses from BIOL 3061(BL38C), BIOL 3763 (BT38L), BIOL 3765 (BT38G), BIOL 3762 (BT36D), BIOL 3069 (BL33B), BIOL 3262 (BL38J), BIOL 3766 (BT38J), BIOL 3764 (BT38E).

**Environmental & Natural Resource Management**  
1. AGSL 3002 (AS33D), AGSL 3004 (AS34D), BIOL 3463 (BL39B), BIOL 3464 (BT37E), BIOL 2461 (Z24B), BIOL 3062 (Z36B)  
2. Eight (8) credits of elective courses from (BIOL 3062 (Z24B), BIOL 2063 (Z23C), BIOL 3461(Z31A), BIOL 3864 (Z34D), AGEX 2001 (AX25B), AGBU 3003 (AM33D), CHEM 3550 (C30E), BIOL 3069 (BL33B), AGRI 3001 [AG39A], AGBU (AM39A)).

5. **Computer Science**  
1. COMP 2000, COMP 2100, COMP 2200, COMP 3000, COMP 3100 (CS20A, CS20E, CS21E, CS24E, CS30E, CS31A).  
2. Eight (8) credits of elective courses.

**Computer Science and Management**  
The thirty-two (32) compulsory credits in Computer Science must be obtained from the six (6) core courses plus COMP 2300 (CS22A). Programming for Business Applications, and COMP 2700 (CS27E) Database Management Systems I.

6. **Mathematics**  
A student must have credits for MATH 2100, MATH 2110, MATH 2120 and MATH 2160 (M20A, M20B, M21A, and M21B) and sixteen (16) credits from other advanced courses in Mathematics. At least eight (8) of these sixteen (16) credits must be from Level III Mathematics courses.

**Double Major in Mathematics**  
(subject to availability of courses)  
Sixty-four (64) credits from Level II and Level III Mathematics courses including MATH2100, MATH 2110, MATH 2120 and MATH 2160 (M20A, M20B, M21A and M21B). At least thirty-two (32) credits must be from Level III Mathematics courses.

7. **Physics**  
i. PHYS2280 (P28A), PHYS2281 (P28B), PHYS2283 (P28D), PHYS3385 (P38F), PHYS3387 (P38P)  
ii. PHYS2282 (P28C), PHYS3381 (P38B), PHYS3383 (P38D), PHYS3384 (P38E)
NB: (a) Course requirements for degrees offered by the School of Agriculture and the Chemistry with Management and Computer Science with Management are outlined in their respective areas of the booklet.

(b) Requirements for minors and areas of Specialisation in other disciplines are listed in the individual departmental sections of the booklet.

(c) No course may be used to satisfy the requirements of more than one major. In cases where there is a common course in two majors or a major and a minor such a course may be replaced with an alternative course which must be approved by the Dean of the Faculty concerned.

### APPENDIX VI

**MINORS**

Candidates are required to complete fifteen or sixteen credits.

1. **ANIMAL SYSTEMS MANAGEMENT**
   - AGLS 2003 (AL25A) Livestock Genetics and Breeding (3)
   - AGLS 3002 (AL34A) Biotechnology for Livestock Production (3)
   - AGLS 3003 (AL36A) Ruminant Production Systems (3)
   - AGLS 3004 (AL37B) Non-Ruminant Production Systems (4)
   - AGLS 3005 [AL38 B] Principles of Wildlife Production and Management (3)
   - AGLS 3006 (AL39A) Current Issues in Animal Science (3)
   - BIOL 3863 (Z34E) Tropical Aquaculture (4)
   - AGLS 3012 AL313 Project (4)

2. **CROP SYSTEMS MANAGEMENT**
   - AGCP 2003 [AC26B] Mechanisation for Crop Production (3)
   - AGCP 3002 [AC32E] Crop Production Systems (4)
   - AGCP 3003 [AC32F] Post Harvest Systems (4)
   - AGCP 3001 [AC31A] Vegetable Production (4) or
   - AGCP 3004 [AC32G] Introduction to Floriculture (3)
   - AGCP 3006 [AC32J] Principles of Fruit Crop Production (4)
   - AGCP 3013 [AC313] Project (4)

3. **HORTICULTURE**
   - AGCP 3004 [AC32G] An Introduction to Floriculture (3)
   - AGCP 3005 [AC32H] Landscape and Turfgrass Management (3)
   - AGCP 3000 [AC31A] Vegetable Production (4)
   - AGCP 3006 [AC32J] Principles of Fruit Crop Production
   - AGCP 3013 [AC313] Project (4)

4. **ENTREPRENEURSHIP**
   - AGBU 3001 (AM32A) Marketing and Price Analysis (4)
   - AGBU 3007 (AM37A) New Venture Creation and Management (4)
   - AGBU 3006 (AM36A) Agricultural Project Appraisal and Implementation (4)
   - MGMT 3032 (MS 33C) Entrepreneurial Studies (3)
   - MGMT 2021 (MS 27A) Business Law (3)
   - MGMT 2007 (MS 21E) Introduction to E-commerce (3)
   - HUEC 3004 (AH33B) Food Product Development (3)
   - BIOL 3863 (Z34E) Tropical Aquaculture (4) (not offered in 2004/05)
   - AGBU 3003 (AM33D) Introduction to Ecotourism: Production Design and Management (4)

5. **COMMUNICATION AND EXTENSION**
   - AGEX 2001 (AX25B) Operation and Management of Extension Programmes (4)
   - AGEX 3000 (AX30A) Technology Transfer in Agriculture (3)
   - AGEX 3012 (AX312) Project (4)
   - AGEX 3002 (AX36A) Communication Skills for Agricultural Professionals (3)
   - AGEX 3003 (AX39A) Gender Issues in Agriculture (3)
   - AGEX 3001 (AX35A) Island Food Systems (3)
6. ENVIRONMENTAL AND
NATURAL RESOURCES MANAGEMENT
BIOL 3464 (BT37E) Tropical Forest Ecology and Management (4)
BIOL 3461 (Z31A) Coastal Ecosystem Management (4)
BIOL 2461 (Z24B) Humans and the Environment (4)
BIOL 2063 (Z23C) Marine Ecology (4)
BIOL 3864 (Z34D) Fisheries Biology & Management (4)
(not offered in 2004/05)
AGSL 3004 [AS34D] Integrated Watershed Management (4)
AGSL 3002 [AS33D] Soil Survey and Land Evaluation (4)
BIOL 3463 (BL39B) Pollution and Environmental Management (4)
BIOL 3062 (Z36B) Conservation Biology (4)
AGRI 3001 [AG39A] Climate Change Impact & Management (4)
AGBU (AM39A) Environmental Economics (4)
AGBU 3003 (AM33D) Introduction to Ecotourism: Product Design & Management (4)

7. BIOTECHNOLOGY
BIOL 3762 (BT36D) Plant Biotechnology (4)
BIOL 3763 (BT38L) Crop Improvement (4)
BIOL 3262 (BL38J) Microbial Biotechnology (4)
BIOL 3061 (BL38C) Molecular Biology (4)
BIOL 3865 (BL39A) Animal Biotechnology (4)
AGLS 2003 (AL25A) Livestock Genetics and Breeding (3)

8. ENVIRONMENTAL BIOLOGY
BIOL 2063 (Z23C) Marine Ecology (4)
BIOL 2062 (Z23B) Freshwater Biology (4)
BIOL 2461 (Z24B) Humans and the Environment (4)
BIOL 3062 (Z36B) Conservation Biology (4)
BIOL 3464 (BT37E) Tropical Forest Ecology and Management (4)

9. ZOOLOGY
BIOL 2861 (Z21E) Functional Design in Animals (4)
BIOL 2862 (Z21F) Animal Physiology (4)
BIOL 3861 (Z33E) Animal Behaviour (4)
BIOL 3662 (BL36B) Evolution and Biosystematics (4)
BIOL 2866 (Z22B) Entomology (4)
BIOL 2864 (Z22C) Parasitism
[Students majoring in Biology will be able to minor in Botany and/or Zoology]

10. BOTANY
BIOL 2761 (BT27A) Plant Physiology (4)
BIOL 3761 (BT31C) Functional Design in Plants (4)
BIOL 3763 (BT38L) Crop Improvement (4)
BIOL 3762 (BT36D) Plant Biotechnology (4)
BIOL 3765 (BT38G) Plant Pathology (4)

11. BIOLOGY
BIOL 2862 (Z21F) Animal Physiology (4)
BIOL 2761 (BT27A) Plant Physiology (4)
and any two courses from the following:
BIOL 2261 (BL28C) Biology of Micro-organisms (4)
BIOL 3061 (BL38C) Molecular Biology (4)
BIOL 2162 (BL27B) Advanced Genetics (4)
BIOL3662 (BL36B) Evolution and Biosystematics (4)
BIOL 3062 (Z36B) Conservation Biology (4)
BIOL 2361 (BC22A) Biomolecules & Energy Metabolism, (4)

12. BIOCHEMISTRY
BIOL 2361 (BC22A) Biomolecules and Energy Metabolism (4)
BIOL 2363 (BC23A) Metabolism (4)
and any two courses from the following:
BIOL 2362 (BC22B) Further Metabolism and Gene Expression (4)
BIOL 2364 (BC23B) Advanced General Biochemistry (4)
BIOL 3361 (BC33A) Applied Biochemistry (4)
BIOL 3364 (BC37B) Clinical Biochemistry (4)
BIOL 3362 (BC38B) Selected Topics in Biochemistry (4)
BIOL 3061 (BL38C) Molecular Biology (4)
### 13. MARINE BIOLOGY
- BIOL 2063 (Z23C) Marine Ecology (4)
- BIOL 3461 (Z31A) Coastal Ecosystem Management (4)
- BIOL 3864 (Z34D) Fisheries Biology & Management (4) (not offered in 2004/05)
- BIOL 3863 (Z34E) Tropical Aquaculture (4) (not offered in 2004/05)

### 14. CHEMISTRY
Students not pursuing a major in Chemistry can obtain a minor with the following courses:
- CHEM 2160 (C20A), CHEM 2260 (C20B), CHEM 2360 (C20C), and either CHEM 2015 (C20D), or CHEM 2025 (C20E)

### 15. ANALYTICAL CHEMISTRY
Chemistry majors can also pursue a minor in Analytical Chemistry by taking the following additional courses:
- CHEM 2460 (C20F), CHEM 3460 (C30F), CHEM 3461 (C31F).

### 16. COMPUTER SCIENCE
Students are required to take 4 courses (a total of 16 credits) as follows:
- COMP 2000A (CS20A) Data Structures
- COMP 2500 (CS24E) Object Oriented Programming
  - Any two of:
    - COMP 2200 (CS21E) Computer Architecture
    - COMP 2700 (CS27E) Database Management Systems I
    - COMP 3000 (CS30E) Design & Analysis of Algorithms
    - COMP 3100 (CS31A) Operating Systems
    - COMP 3150 (CS32A) Computer Networks
    - COMP 3250 (CS32F) Software Engineering

### 17. MATHEMATICS
Students are required to do any two (2) core courses including either M 20A or M 21A and any two (2) other Mathematics courses at advance level (Level II/Level III).

### 18. APPLIED PHYSICS
- **Electronics**
  [PHYS2282 (P28C), PHYS2291 (P29B), PHYS3382 (P38C), PHYS3391 (P39B)]

- **Medical Physics and Bioengineering**
  [PHYS2290 (P29A), PHYS2291 (P29B), PHYS3391 (P39B), PHYS3390 (P39A)]

- **Environmental Physics**
  Any four (4) of:
  [PHYS2292 (P29C), PHYS2293 (P29D), PHYS3392 (P39C), PHYS3393(P39D), PHYS2295 (P29F)]

- **Material Sciences**
  Any four (4) of:
  [PHYS2294 - (P29E), PHYS3394 (P39E), PHYS3396 (P39G), PHYS3395 (P39F), PHYS2295 - (P29F)]

**Note:** For the composition of the major and accompanying minor(s), no course can be used more than once.
APPENDIX VII
GRADING SCHEME
The Grading Scheme used in the Faculty of Science & Agriculture is as follows:
(For students entering the Faculty prior to 2003/04.

<table>
<thead>
<tr>
<th>CLASS OF HONOURS</th>
<th>GRADE OF DEGREE</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>85 - 100</td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>A</td>
<td>76 - 84</td>
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<td>70 - 75</td>
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</tr>
<tr>
<td>Upper Second</td>
<td>B+</td>
<td>60 - 69</td>
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<tr>
<td>Lower Second</td>
<td>B</td>
<td>50 - 59</td>
</tr>
<tr>
<td>Pass</td>
<td>C</td>
<td>40 - 49</td>
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</table>

For students entering the faculty from 2003/04 onwards, the GPA system is in effect:

<table>
<thead>
<tr>
<th>MARK</th>
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<th>QUALITY POINTS</th>
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<tbody>
<tr>
<td>86-100</td>
<td>A+</td>
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<tr>
<td>70-85</td>
<td>A</td>
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<tr>
<td>67-69</td>
<td>A-</td>
<td>3.7</td>
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<tr>
<td>63-66</td>
<td>B+</td>
<td>3.3</td>
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<tr>
<td>60-62</td>
<td>B</td>
<td>3.0</td>
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<tr>
<td>57-59</td>
<td>B-</td>
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<tr>
<td>53-56</td>
<td>C+</td>
<td>2.3</td>
</tr>
<tr>
<td>50-52</td>
<td>C</td>
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<td>1.3</td>
</tr>
<tr>
<td>40-42</td>
<td>D</td>
<td>1.0</td>
</tr>
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APPENDIX VIII
LIST OF EXEMPTIONS
Exemptions from Level I or specific Level I and Level II courses, and credits for others are granted to students with the following qualification:

i. **Associateship in Science of the JSA/CASE**
   - all Level I Agriculture courses

ii. **Diplomates in Agriculture COAJ with GPA>2.70**
   - exemption from all Level I courses except AP10C, AP10E and AG14C.
   - credits for one of AGBU 2002 (AM23B), AGBU (AM30A), AGBU (AM30B), AGBU 3000 (AM30C).

iii. **Level I of the B.Sc. Management Studies:**
   - all Level I Agriculture courses for students entering the B.Sc. Agrit-business.

iv. **Specified Level I Natural Sciences and Social Sciences courses offered at Cave Hill, Mona or St. Augustine (or equivalent qualifications-all Level I courses).**

v. **Diplomates of ECIAF/COAJ/CASE**
   - exemptions from AG133, CS11C and CS11D.

v. **Graduates of CASE are exempted from FD11B.**

**NB:** ECIAF diplomates in Forestry will not be exempted from AG133.
DEPARTMENT OF
AGRICULTURAL ECONOMICS AND EXTENSION

Dr. R. H. Singh
(Head)

Mrs. C. O’Brady-Ramlochansingh
(Secretary)

Tel: (868) 645-3232 ext. 2094/3275
Fax: (868) 663-8355
Email: daee@fans.uwi.tt

R. H. Singh,
B.Sc., M.Sc., Ph.D. (Manitoba)

St. C. P. Barker,
B.Sc., M.Sc., Ph.D. (UWI)

D. I. Dolly,
B.Sc., (UWI), MS (Wis.),
Ph.D. (UWI)

C.A. Pemberton,
B.Sc., M.Sc. (UWI),
Ph.D. (Manitoba)

S. Ragbir,
B.Sc., M.Phil (UWI)

J. Seepersad,
B.Sc., M.Sc. (UWI), Ph.D. (Illin.)

C. N. Brathwaite,
B.Sc. (UWI), M.B.A.
(Babson College)

S. D. Hutchinson,
B.Sc., M.Sc. (UWI), Ph.D. (Florida)

C.J. Rennie,
B.Sc. (McGill),
M.S. (University of Missouri)

I. Francis-Granderson,
B.Sc. (Howard), MPH (UWI)

Senior Lecturer &
Head of Department

Lecturer

Lecturer

Senior Lecturer

Communications Coordinator

Senior Lecturer

Lecturer

Lecturer

Lecturer &
Subject Leader,
Human Ecology
Programme

Lecturer
B.Sc. AGRI-BUSINESS MANAGEMENT

Students can gain admission into this programme either directly through the Faculty of Science & Agriculture’s Year I Agriculture Programme or after completion of Year I in the Faculty of Social Sciences.

The B. Sc. Agri-business Management degree is also available by distance through the University’s Distance Education Programme.

1. **Students entering Level/Year 1 of the Faculty of Science and Agriculture will be required to pass the following courses:**

   **Level 1**
   **SEMESTER I**
   **Course**
   AGRI 1004 (AG15B) Economic and Social Environment [5]
   MS15E Introduction to Financial Accounting [3]
   AGRI 1010 (AG18A) Introduction to Crop and Livestock Production [4]
   AGBU 1004 (AM19B) Consumer Economics [3]
   COMP 1011 (CS10M) Introduction to Information Technology [3]
   AGSL 1000 (AG133) Practical Skills [3]

   **SEMESTER II**
   **Course**
   AGBU/AGEC 1002 Introduction to Agro-Environmental Mgt. (AM17B) [4]
   MS15F Introduction to Cost & Mgt. Accounting [3]
   AGBU 1003 (AM19A) Applied Analytical Techniques [3]
   AGBU 16B Introduction to Agriculture [4]

   Students who have completed Level I of the B.Sc. Agriculture (General) or Year I of Social Sciences can enter Level 2 of the B.Sc. Agri-business Management degree and will be required to register for the following Level II courses:

   **The programme for Level II is listed below:**

   **YEAR 2**
   **SEMESTER I**
   **Course**
   MGMT 2021 (MS27A) Business Law [3]
   ACCT 2043 (MS25C) Management Accounting [3]
   ASCP 2000 (AC23A) Biosystems Engineering Principles [3]
   AGBU 3008 (AM39C) Internship – Summer Course [4]

   **SEMESTER II**
   **Course**
   MS21B Mgt. Info System I [3]
   MS20A Prin. of Marketing [3]
   MS22A Organisational Behaviour [3]
   AGBU 3000 (AM30C) Farm Business Mgt. [4]
   AGBU 3001 (AM32A) University Foundation Course [3]
   AGBU 3001 (AM32A) Marketing and Price Analysis [4]
### YEAR 3

#### SEMESTER I

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FINM 2060 (MS28D)</td>
<td>Financial Management</td>
</tr>
<tr>
<td>AGBU 3006 (AM36A)</td>
<td>Agricultural Project Appraisal &amp; Implement.</td>
</tr>
<tr>
<td>MGMT 3047 (MS32A)</td>
<td>Human Resource Mgt.</td>
</tr>
<tr>
<td>MS31B</td>
<td>Mgt. Info. System II</td>
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<tr>
<td>AGBU 3012 (AM312)</td>
<td>Project</td>
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#### SEMESTER II

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>MS33B</td>
<td>Business Strategy and Policy</td>
</tr>
<tr>
<td>AGBU 3002 (AM32D)</td>
<td>Elective</td>
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<tr>
<td>AGBU 3008 (AM39C)</td>
<td>International Marketing of Agricultural Products</td>
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</tbody>
</table>

2. **Students entering through the Faculty of Social Sciences will be required to pass the following courses:**

### LEVEL II

#### Year 2

#### SEMESTER I

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MGMT 2014 (MS22A)</td>
<td>Organisational Behaviour</td>
</tr>
<tr>
<td>MGMT 2021 (MS27A)</td>
<td>Business Law</td>
</tr>
<tr>
<td>AGBU 2002 (AM23B)</td>
<td>Mgt. &amp; Economics of Agri. Prod. &amp; Mktg.</td>
</tr>
<tr>
<td>AGBU 2000 (AM21A)</td>
<td>Agriculture in Economy</td>
</tr>
<tr>
<td>ACSP 2000 (AM23A)</td>
<td>Biosystems Engineering Principles</td>
</tr>
<tr>
<td>AGR1 1010 (AG18A)</td>
<td>Introduction to Crop &amp; Livestock Production</td>
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<tr>
<td>AGBU 3008 (AM39C)</td>
<td>Internship – Summer Course</td>
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#### SEMESTER II

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MGMT 2012 (MS21B)</td>
<td>Management Info System I</td>
</tr>
<tr>
<td>MKTG 2080 (MS20A)</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>AGBU 3001 (AM32A)</td>
<td>Marketing and Price Analysis</td>
</tr>
<tr>
<td></td>
<td>University Foundation Course</td>
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</tbody>
</table>

#### Year 3

#### SEMESTER I

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AGBU 3006 (AM36A)</td>
<td>Agric. Project Appraisal &amp; Implement</td>
</tr>
<tr>
<td>FINM 2060 (MS28D)</td>
<td>Financial Management</td>
</tr>
<tr>
<td>ACCT 2043 (MS25C)</td>
<td>Management Accounting</td>
</tr>
<tr>
<td>MNGT 3047 (MS32A)</td>
<td>Human Resource Mgt.</td>
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<tr>
<td>MNGT 3042 (MS31B)</td>
<td>Mgt. Info. System II</td>
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<tr>
<td>AGBU 3012 (AM312)</td>
<td>Project</td>
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#### SEMESTER II

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AGBU 3002 (AM32D)</td>
<td>International Marketing of Agric. Products</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
</tr>
<tr>
<td></td>
<td>University Foundation Course</td>
</tr>
</tbody>
</table>
MAJOR IN AGRI-BUSINESS

Students admitted into the Major in Agri-business are required to do the following:

FIRST YEAR (PREREQUISITES)

SEMESTER I

AGSL 1000 (AS16B) Soils & the Environment
MS15E Introduction to Financial Accounting
AGRI 1004 (AG15B) The Social and Economic Environment (or EC10F Introduction to Economics II & PS14A Introduction to Social Psychology)

SEMESTER II

AGRI 1003 (AG14C) Introduction to Mathematics
AGRI 1005 (AG16B) Introduction to Agriculture
AGBU 1002 (AM17B) Introduction to Agro-Environmental Management
AGRI 1000 (AG133) Practical Skills (Summer)

SECOND / THIRD YEAR

AGBU 2002 (AM23B) Management and Economics of Agricultural Production and Marketing (4 credits)
AGBU 2000 (AM21A) Agriculture in the Economy (4 credits)
AGBU 3000 (AM30C) Farm Management (4 credits)
AGBU 3008 (AM39C) Internship
AGBU 3012 (AG312) Project (4 credits)
MS21B Management Information Systems (3 credits)
MS20A Principles of Marketing (3 credits)
MS22A Organizational Behaviour (3 credits)
MS28D Financial Management (3 credits)

N.B. Additional year one courses may be required depending on the other minor(s) or major(s) that the student intends to pursue. For example:
The minor in Economics requires EC10D, EC10F, EC160 & EC141.
The minor in International Relations requires GT11C or GT11D.
The elective course HUEC 3004 (AH33B) Food Product Development in the Entrepreneurship minor requires HUEC 1001 AH10C Food Science.
The minor in Psychology requires PS11B or PS14A. One of these courses is also strongly recommended for the Communications and Extension minor.
The course MS15F is required for some electives offered by the Department of Management Studies

* Students pursuing a minor/major in Mathematics or with previous certification in Mathematics are strongly advised to apply for exemption from MATH 1130 (AG14C)
ELECTIVES

Agri-business students are required to complete six (6) credits of electives from the courses listed below:

<table>
<thead>
<tr>
<th>Course Codes</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGEX 3000 (AX30A)</td>
<td>Technology Transfer in Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>AL21B</td>
<td>Livestock Production</td>
<td>4</td>
</tr>
<tr>
<td>MS33C</td>
<td>Entrepreneurial Studies</td>
<td>3</td>
</tr>
<tr>
<td>MS23B</td>
<td>Caribbean Business Environment</td>
<td>3</td>
</tr>
<tr>
<td>AC33A</td>
<td>Post Harvest Technology</td>
<td>3</td>
</tr>
<tr>
<td>AC34A</td>
<td>Biometrical Methods in Agriculture</td>
<td>4</td>
</tr>
<tr>
<td>AGEX 3002 (AX36A)</td>
<td>Communication Skills for Agricultural Professionals</td>
<td>3</td>
</tr>
<tr>
<td>HUEC 3007 (AH35A)</td>
<td>Law and the Family</td>
<td>3</td>
</tr>
<tr>
<td>AGBU 3007 (AM37A)</td>
<td>New Venture Creation and Management</td>
<td>4</td>
</tr>
<tr>
<td>HUEC 2009 (AH25B)</td>
<td>Family Resource Management</td>
<td>3</td>
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<tr>
<td>AC38A</td>
<td>Ornamental Horticulture</td>
<td>3</td>
</tr>
<tr>
<td>AGBU 3004 (AM34A)</td>
<td>Agricultural Finance and Farm Credit</td>
<td>3</td>
</tr>
<tr>
<td>MS21E</td>
<td>Introduction to E-commerce</td>
<td>3</td>
</tr>
<tr>
<td>MS30D</td>
<td>Marketing Planning</td>
<td>3</td>
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<td>MS33A</td>
<td>Small Business Management</td>
<td>3</td>
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<tr>
<td>GENS 3260 (NS21B)</td>
<td>Gender and Science</td>
<td>4</td>
</tr>
<tr>
<td>AGBU (AM33D)</td>
<td>Introduction to Ecotourism: Product Design &amp; Management</td>
<td>4</td>
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</tbody>
</table>

* *Courses may also be selected from the Entrepreneurship minor.*

*NB: Elective Courses may include any advanced course offered by FSA, or courses from other Faculties with the approval of the Dean provided that the prerequisites for the courses are satisfied.

B.Sc. HUMAN ECOLOGY

SPECIALISATIONS:

I. NUTRITION AND DIETETICS

II. CONSUMER SCIENCES

1. Students entering Year 1 will be required to pass the following courses:

LEVEL I

Year 1

**SEMESTER I**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AGRI 1001 (AG13B)</td>
<td>Microbiology I [2]</td>
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<tr>
<td>AGRI 1000 (AG13C)</td>
<td>Microbiology II [2]</td>
</tr>
<tr>
<td>AGRI 1004 (AG15B)</td>
<td>Economic &amp; Social Environment [5]</td>
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<td>MS15E</td>
<td>Introduction to Financial Accounting [3]</td>
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<td>Introduction to Nutrition [3]</td>
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<tr>
<td>HUEC 1001 (AH10C)</td>
<td>Food Science [5]</td>
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**SEMESTER II**

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<tbody>
<tr>
<td>HUEC 1004 (AH13B)</td>
<td>Introduction to Foods [3]</td>
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<td>AG14C</td>
<td>Mathematics for Scientists [3]</td>
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<tr>
<td>MS15F</td>
<td>Introduction to Accounting [3]</td>
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<tr>
<td>COMP 1011</td>
<td>Introduction to Information Technology [3]</td>
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LEVEL II

The programme for Level II is listed below: The core courses are common to both specialisations.

Year 2

**CORE COURSES**

**SEMESTER I**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>HUEC 2001(AH21A)</td>
<td>Basic Human Anatomy &amp; Physiology [3]</td>
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<tr>
<td>AGEX 3002 (AX36A)</td>
<td>Communication Skills for Agri. Professionals [3]</td>
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<td>PS11B</td>
<td>Introduction to Social Psychology [3]</td>
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<td>HUEC 2000 (AH20A)</td>
<td>Biochemistry [3]</td>
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## SEMESTER II

### Course

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<tbody>
<tr>
<td>HUEC 2002 (AH22A)</td>
<td>Nutrition Throughout The Life Cycle</td>
<td>3</td>
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<tr>
<td>EC16A</td>
<td>Introduction to Statistics</td>
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</tr>
<tr>
<td>MS21B</td>
<td>Management Information Systems I</td>
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**Nomination and Dietetics Specialisation**

### SEMESTER I

#### Course

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<tbody>
<tr>
<td>HUEC 2004 (AH23B)</td>
<td>Foodservice Systems Management (Equip. Layout &amp; Design)</td>
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### SEMESTER II

#### Course

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<td>HUEC 2010 (AH26A)</td>
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<td>HUEC 3002 (AH33A)</td>
<td>Foodservice Systems Mgt. (Quantity Foods)</td>
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### Consumer Sciences Specialisation

### SEMESTER I

#### Course

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<td>Introduction to Textiles</td>
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<tr>
<td>HUEC 2008 (AH24D)</td>
<td>Social and Psychological Aspects of Apparel</td>
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### SEMESTER II

#### Course

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<td>Family Resource Management</td>
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<td>HUEC 2006 (AH24B)</td>
<td>Basic Apparel Construction</td>
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### YEAR 3 - COMMON CORE COURSES

#### SEMESTER I

#### Course

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<td>MS22A</td>
<td>Organisational Behaviour</td>
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<tr>
<td>HUEC 3004 (AH33B)</td>
<td>Food Product Development</td>
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<tr>
<td>ED20M</td>
<td>Introduction to Curriculum Studies</td>
<td>3</td>
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<td>HUEC 3012 (AH312)</td>
<td>Project</td>
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#### SEMESTER II

#### Course

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<td>Electives</td>
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ELECTIVE COURSES
2. B.Sc. Human Ecology students are required to pass a minimum of six (6) credits of elective courses.

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<tr>
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<td>Advanced Flat Pattern Development</td>
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<td>Selected Theories in Social Psychology</td>
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<td>PS24E</td>
<td>Development of Technology</td>
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<td>Ornamental Horticulture</td>
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<td>AGBU 3001 (AM32A)</td>
<td>Marketing and Price Analysis</td>
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<td>Agricultural Finance &amp; Farm Credit</td>
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<td>Agricultural Project Appraisal &amp; Implementation</td>
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<tr>
<td>AGBU 3005 (AM35B)</td>
<td>Introduction to Quantitative Methods in Economics</td>
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<td>AGEX 2001 (AX25B)</td>
<td>Operation and Management of Extension Programmes</td>
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<td>AGEX 3003 (AX39A)</td>
<td>Gender Issues in Agriculture</td>
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<td>SY31C</td>
<td>Sociology of Health</td>
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<tr>
<td>GENS 3260 (NS21B)</td>
<td>Gender and Science</td>
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*NB: Elective Courses may include any advanced course offered by FSA, or courses from other Faculties with the approval of the Dean provided that the Prerequisites for the courses are satisfied.*

QUALIFICATIONS FOR ADMISSION
To be admitted to read for the Diploma in Agricultural Extension, candidates must:

i. be graduates of an approved University; or

ii. hold an approved technical or professional qualification award by an approved body; and have, in the opinion of the University, practical experience or other qualifications of special relevance to the course of studies.

Candidates will be awarded the diploma on successful completion of all the core courses and one of the two elective courses:

CORE COURSES
- AGBU 3004 (AM34A) Agricultural Finance & Farm Credit 3
- AGBU 3006 (AM36A) Agricultural Project Appraisal & Implementation 3
- AGBU 3005 (AM35B) Introduction to Quantitative Methods in Economics 3
- AGEX 2001 (AX25B) Operation and Management of Extension Programmes 4
- AGEX 3003 (AX39A) Gender Issues in Agriculture 3

ELECTIVE COURSES
- AGEX 5006 (AX507) Managing Extension for Agricultural and Rural Development
- AGEX (AX508) Rural Social Systems

DIPLOMA IN AGRICULTURAL EXTENSION
The course of study for the Diploma in Agricultural Extension will be completed over one (1) academic year of full-time studies, consisting of lectures, seminars and practical assignments along with field research which can be conducted in any Caribbean country.
SYLLABI FOR THE DIPLOMA IN INSTITUTIONAL AND COMMUNITY DIETETICS AND NUTRITION
(NUTRITION AND DIETETICS INTERNSHIP PROGRAMME)
The Diploma in Institutional and Community Dietetics and Nutrition is offered over a one (1) year period on a full-time basis only, including the Summer. The programme includes supervised practical experience and lectures.

All regulations of the FSA and The UWI will apply to the Diploma Programme except where otherwise stated in the Regulations of this Programme.

The Programme will consist of the following courses:

**SEMESTER I**
HUEC 500 (AH51A)  Advanced Foodservice Systems Management  (4)
HUEC 501 (AH51P)  Foodservice Systems Management Practicum  (8)

**SEMESTER II**
HUEC 502 (AH52B)  Advanced Clinical Nutrition  (4)
HUEC 503 (AH52P)  Clinical Nutrition Practicum  (8)

**SEMESTER IV**
HUEC 504 (AH53C)  Advanced Community Nutrition  (4)
HUEC 505 (AH53P)  Community Nutrition Practicum  (8)

*Numbers in parenthesis indicate the number of credits. One credit hour is one (1) lecture hour or three (3) practical hours per week in any one semester.*

For the practical courses HUEC 501 (AH51P), HUEC 503 (AH52P), HUEC 505 (AH53P), in-course assignments will contribute 100% to the total marks for the course.
DEPARTMENT OF
FOOD PRODUCTION

Dr G. Gouveia,
Head of Department

Mrs. Margaret Maxwell
Departmental Secretary

Tel: 1-868-662-2002, Ext. 2090 or 2089
Fax: 1-868-645-0479 or 663-9686
Email: uwidfp@tstt.net.tt

Professors:

R.A.I. Brathwaite,
B.Sc. (Poona), Ph.D. (UWI)
Professor & Crop Science

N. Badrie,
B.Sc., M.Sc., Ph.D. (UWI)
Professor of Soil Physics

I. Bekele,
B.Sc. (Addis Ababa), M.Sc. (Reading) Ph.D. (Cornell)
Senior Lecturer, Food Science

G.W. Garcia,
B.Sc., Ph.D. (UWI)
Senior Lecturer, Soil Physics

G. Gouveia,
B.Sc., Ph.D. (UWI)
Senior Lecturer, Food Science

G. Eudoxie
B.Sc., Ph.D. (UWI)
Assistant Lecturer, Biometrics

C.H.O. Lallo,
B.Sc., M.Sc. (UWI)
Senior Lecturer, Animal Science

M. Mohammed,
B.Sc. (UWI), M.Sc. (Guelph), Ph.D. (UWI)
Senior Lecturer, Crop Science

M. Knight
B.Sc. M.Sc. (UWI), Ph.D. (West Virginia)
Lecturer, Animal Science

L. Roberts-Nkrumah,
B.Sc., Ph.D. (UWI)
Lecturer, Crop Production

R.J. Stone,
B.Sc. (UWI), M.Sc. (Guelph), Ph.D. (UWI)
Senior Lecturer, Agricultural Engineering
**B.Sc. AGRICULTURE (General)**

Students admitted into the B.Sc. Agriculture programme in the academic year 2004-2005 are required to complete the courses given below.

**COURSE ARRANGEMENT BY YEAR AND SEMESTER OF THE B.SC. AGRICULTURE (General) CORE COURSES**

To complete the B.Sc. Agriculture (General) students must pass the core courses, and a minimum of fifteen (15) credits of elective courses.

In addition, all students must complete AG133 (Practical Skills), AG233 (Internship) and AG312 (Research Project).

### LEVEL I - CORE COURSE

#### SEMESTER I

<table>
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<tr>
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<td>Cell Biochemistry 2</td>
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<td>AGBC 1000 [AP10B]</td>
<td>Cell Biochemistry and Genetics 4</td>
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<tr>
<td>AGRI 1001 [AG13B]</td>
<td>Microbiology 1 2</td>
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<tr>
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<td>Economic and Social Environment 5</td>
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<tr>
<td>AGSL 1000 (AS16B)</td>
<td>Soils and the Environment 4</td>
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<tr>
<td>COMP 1011</td>
<td>Intro. to Information Technology 3</td>
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<td>FD11A</td>
<td>Caribbean Civilisation 3</td>
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#### SEMESTER II

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<th>Course</th>
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<tr>
<td>AGBC 1002 [AP10E*]</td>
<td>Plant Physiology 2</td>
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<td>AGLS 1000 [AL13B]</td>
<td>Structure and Function of Animals 4</td>
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<td>AGBC 1003 [AP13B]</td>
<td>Structure and Function of Plants 4</td>
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<td>AGRI 1003 (AG14C)</td>
<td>Mathematics for Scientists 3</td>
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<td>AGRII 1005 (AG16B)</td>
<td>Introduction to Agriculture 4</td>
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<td>FD11B</td>
<td>Academic Writing for Different Disciplines 3</td>
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<tr>
<td>(AGRI 1000) AG133</td>
<td>Practical Skills – Summer Course 3</td>
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*To be taken by COAJ/CASE admissions to Part II only*
# LEVEL II - CORE COURSES (Yrs. 2 & 3)

**SEMESTER I**

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<tr>
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<tr>
<td>AGCP 2000 (AC23A)</td>
<td>Biosystems Engineering Principles</td>
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<td>AGCP 2001 (AC24B)</td>
<td>Principles of Crop Science and Production</td>
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<td>AGCP 2002 (AC25A)</td>
<td>Field and Vegetable Crop Production Technology</td>
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<td>AGLS 2002 (AL22B)</td>
<td>Animal Nutrition</td>
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<td>AGBU 2002 (AM23B)</td>
<td>Management &amp; Economics of Agricultural Production &amp; Marketing</td>
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<td>AGSL 2000 (AS22B)</td>
<td>Soil Fertility and Fertilizer Technology</td>
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<td>FD13A</td>
<td>Law, Governance, Economy and Society</td>
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<td>Research Project</td>
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<td>Operation and Management of Extension Programmes</td>
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**SEMESTER II**

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<td>AGCP 3005 (AC32H)</td>
<td>Landscape and Turfgrass Management</td>
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<td>AGCP 3006 (AC32J)</td>
<td>Principles of Fruit Crop Production</td>
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<td>AGLS 3002 (AL34A)</td>
<td>Biotechnology for Livestock Production</td>
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<td>Principles of Wildlife Production &amp; Management</td>
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<td>Soil Survey and Land Evaluation</td>
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<td>GENS 3260 (NS21B)</td>
<td>Gender and Science</td>
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<td>AGEX 3001 (AX35A)</td>
<td>Island Food Systems</td>
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<td>AGBU 3003 (AM33D)</td>
<td>Introduction to Ecotourism: Product Design and Management</td>
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<td>AGRI 3001 (AG39A)</td>
<td>Climate Change Impact and Management</td>
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<tr>
<td>AGSL 3001 (AS31A)</td>
<td>Irrigation and Drainage Technology</td>
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*Every student must complete a research project during his/her period of study. The research project would be conducted over two (2) semesters.*

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# ELECTIVE COURSES

**SEMESTER I**

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<td>AGCP 3004 (AC32G)</td>
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<td>Livestock Genetics and Breeding</td>
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<td>Ruminant Production Systems</td>
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<td>Integrated Watershed Management</td>
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<td>Gender Issues in Agriculture</td>
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<td>AGLS 3000 (AL33B)</td>
<td>Poultry Production</td>
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<td>Livestock Products Technology</td>
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**SEMESTER II**

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*NB: Elective Courses may include any advanced course offered by FSA, or courses from other Faculties with the approval of the Dean provided that the Prerequisites or other equivalent courses are satisfied.*
MAJOR IN AGRICULTURAL SCIENCE

Students admitted into the Major in Agriculture Science are required to do the following courses:

### LEVEL I

#### SEMESTER I

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#### SEMESTER II

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<td>AGRI 1005 (AG16B)</td>
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*To be taken by COAJ/CASE admissions to Part II only*

### LEVEL II

#### SEMESTER I

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<td>AGLS 3003 (AL36A)</td>
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<td>AGCP 2002 (AC25A)</td>
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</table>

#### SEMESTER II

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>AGRI 2001 (AG21C)</td>
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<tr>
<td>AGRI 2002 (AG22C)</td>
<td>3</td>
</tr>
<tr>
<td>AGRI 3000 (AG35B)</td>
<td>4</td>
</tr>
<tr>
<td>AGLS 2001 (AL21C)</td>
<td>4</td>
</tr>
<tr>
<td>AGSL 2001 (AS21D)</td>
<td>3</td>
</tr>
<tr>
<td>FD13A</td>
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</tbody>
</table>

*Every student must complete a research project during his/her period of study. The research project would be conducted over two (2) semesters.*

### ELECTIVES

<table>
<thead>
<tr>
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<th>Credit</th>
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<tbody>
<tr>
<td>AGEX 2001 (AM23B)</td>
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<tr>
<td>AGBU 2002 (AX25B)</td>
<td>3</td>
</tr>
</tbody>
</table>

In order for students doing the Major in Agriculture Science to complete their degree, they may wish to do an additional approved Major OR one (1) or two (2) Minors. Students registering for this programme must do one research project.
MINORS

To qualify for a Minor, students must pass a minimum of fifteen (15) credits in the areas listed below, indicated the Research Project.

MINOR IN ANIMAL SYSTEMS MANAGEMENT

Students must do AGLS 2003 (AL25A) and any other thirteen (13) credits from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGLS 2003 (AL25A)</td>
<td>Livestock Genetics and Breeding</td>
<td>3</td>
</tr>
<tr>
<td>AGLS 3002 (AL34A)</td>
<td>Biotechnology for Livestock Production</td>
<td>3</td>
</tr>
<tr>
<td>AGLS 3003 (AL36A)</td>
<td>Ruminant Production Systems</td>
<td>3</td>
</tr>
<tr>
<td>AGLS 3004 (AL37B)</td>
<td>Non-Ruminant Production Systems</td>
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</tr>
<tr>
<td>AGLS 3005 (AL38B)</td>
<td>Principles of Wildlife Production and Management</td>
<td>3</td>
</tr>
<tr>
<td>AGLS 3006 (AL39A)</td>
<td>Current issues in Animal Sciences</td>
<td>3</td>
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<tr>
<td>BIOL 3863 (Z34E)</td>
<td>Research Project</td>
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MINOR IN CROP SYSTEMS MANAGEMENT

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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>AGCP 2003 (AC26B)</td>
<td>Mechanisation for Crop Production</td>
<td>3</td>
</tr>
<tr>
<td>AGCP 3002 (AC32E)</td>
<td>Crop Production Systems</td>
<td>4</td>
</tr>
<tr>
<td>AGCP 3003 (AC32F)</td>
<td>Postharvest Systems</td>
<td>3</td>
</tr>
<tr>
<td>AGCP 3013 (AC313)</td>
<td>Research Project</td>
<td>3</td>
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<tr>
<td>AGSL 3000 (AS30B)</td>
<td>Water Resources Management and Protection</td>
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</table>

MINOR HORTICULTURE

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<td>AGCP 3001 (AC31A)</td>
<td>Vegetable Production</td>
<td>4</td>
</tr>
<tr>
<td>AGCP 3004 (AC32G)</td>
<td>An Introduction to Floriculture</td>
<td>3</td>
</tr>
<tr>
<td>AGCP 3005 (AC32H)</td>
<td>Landscape and Turfgrass Management</td>
<td>3</td>
</tr>
<tr>
<td>AGCP 3006 (AC32J)</td>
<td>Principles of Fruit Crop Production</td>
<td>4</td>
</tr>
<tr>
<td>AGCP 3013 (AC313)</td>
<td>Research Project</td>
<td>3</td>
</tr>
</tbody>
</table>

or another course approved by the Department

*Note: Students in the School of Agriculture are allowed to do one project only.*
DEPARTMENT OF CHEMISTRY

Dr. A.R. Maxwell (Head)
B.Sc., M.Sc. (UWI), Ph.D. (Br. Col)

Ms. L. Philip
(Secretary)
Tel: (868) 645-3232 Ext. 3570, 2091; 1-868-662-6013
Fax: (868) 645-377
Email: chemistry@fsa.uwi.tt

Anderson R. Maxwell,
B.Sc., M.Sc. (UWI), Ph.D. (Br. Col)
Senior Lecturer & Head of Department

Lincoln Hall,
B.Sc., M.Sc., Ph.D. (UWI)
Professor

Dyer Narinesingh,
B.Sc., Ph.D. (UWI)
Professor

Gurdial Singh
B.Sc. (Liv), Ph.D. (Man)
Professor

Ivan Chang-Yen,
B.Sc. (Guy), M.Sc., Ph.D. (Brist)
Senior Lecturer

Dow Maharajh,
B.Sc. (Mt. All), Ph.D. (S. Fraser)
Senior Lecturer

David Stephenson,
B.A. (York), M.Phil. (CNAA), Ph.D. (Lond)
Senior Lecturer

Andrew Caffyn,
B.Sc. (Brist), Ph.D. (Camb)
Lecturer

Lutchminarine Chatergoon,
B.Sc., (CNAA), Ph.D. (Lond)
Lecturer

Richard Fairman,
B.Sc., Ph.D. (UWI)
Lecturer

Lebert Grierson,
B.Sc., (Lond), Ph.D. (Lond)
Lecturer

Russel Ramsewak,
B.Sc., Ph.D. (UWI)
Lecturer

Denise Beckles,
AB (Harvard), M.Sc., Ph.D. (Rice University)
Lecturer

Wilfred R. Chan,
B.Sc., M.Sc., (Lond-UCWI), Ph.D. (Lond)
Professor Emeritus

Compton E. Seaforth
B.Sc. (Lond-UCWI), Ph.D. (Wales)
Honorary Lecturer
The Faculty of Science & Agriculture

Baldwin S. Mootoo,  
B.Sc. (Lond-UCWI), M.Sc. (Lond), Ph.D. (UWI)  
Professor Emeritus

Andrew Pelter  
B.Sc., Ph.D., D.Sc. (Brist)  
Honorary Professor

Ms. L. Philip  
Secretary

Ms. N. Robertson  
Clerical Assistant

Ms. B. Cunningham  
Clerical Assistant

Mrs. C. Joseph-Peters  
Office Attendant

CHEMISTRY DEPARTMENT

The following list indicates courses to be taught in 2004/2005:-

SEMMETER I

CHEM 0060 (C06E) Preliminary Chemistry I*
CHEM 1060 (C11C) Introductory Chemistry I
CHEM 2160 (C20A) Main Group Chemistry
CHEM 2260 (C20B) Basic Organic Chemistry I
CHEM 2360 (C20C) Basic Physical Chemistry
CHEM 3160 (C30A) Advanced Inorganic Chemistry
CHEM 3260 (C30B) Basic Organic Chemistry II
CHEM 3360 (C30C) Thermodynamics & Statistical Thermodynamics
CHEM 3460 (C30F) Basic Analytical Chemistry
CHEM 3561 (C30G) Introduction to Polymer Chemistry

SEMMETER II

CHEM 0061 (C06F) Preliminary Chemistry II*
CHEM 1061 (C11D) Introductory Chemistry II
CHEM 2015 (C20D) Spectroscopy
CHEM 2025 (C20E) Kinetics & Mechanism
CHEM 2460 (C20F) Principles of Chemical Analysis
CHEM 3560 (C30E) Environmental Chemistry
CHEM 3161 (C31A) Advanced Topics in Inorganic Chemistry
CHEM 3261 (C31B) Chemistry of Natural Products
CHEM 3562 (C31C) Corrosion Science
CHEM 3461 (C31F) Advanced Analytical Chemistry
CHEM 3563 (C31G) Industrial Chemistry I
CHEM 3262 (C32B) Organic Synthesis

*Taught by School of Continuing Studies

In all Chemistry courses (unless otherwise stated) Practical work will be assessed throughout the semester and will contribute to the candidate’s final mark. Unsatisfactory performance in the Practical component of any course may lead to failure in that course.
ADVANCED COURSES
Courses required for a Chemistry Major are as follows:

1. **Major in Chemistry**
   For students pursuing a major in Chemistry the following are the required courses:
   CHEM 2160 (C20A), CHEM 2260 (C20B), CHEM 2360 (C20C), CHEM 2015 (C20D), CHEM 2025 (C20E) and
   twelve (12) credits from CHEM 3000 (C30) level courses, which should include at least eight (8) credits from CHEM
   3160 (C30A), CHEM 3260 (C30B), and CHEM 3360 (C30C).

2. **Minor in Analytical Chemistry**
   Chemistry majors can also pursue a minor in Analytical Chemistry by taking the following additional courses:
   CHEM 2460 (C20F), CHEM 3460 (C30F), CHEM 3461 (C31F).

3. **Minor in Chemistry**
   Students not pursuing a major in Chemistry can obtain a minor with the following courses:
   CHEM 2160 (C20A), CHEM 2260 (C20B), CHEM 2360 (C20C) and either CHEM 2015 (C20D), or CHEM 2025 (C20E).

OPTION I
CHEMISTRY AND MANAGEMENT
2004/2005

LEVEL I

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MS15E</td>
<td>Introduction to Financial Accounting</td>
<td>(3 credits)</td>
</tr>
<tr>
<td>MS15F</td>
<td>Introduction to Cost and Mgt. Accounting</td>
<td>“</td>
</tr>
<tr>
<td>SY13E</td>
<td>Introduction to Sociology I</td>
<td>“</td>
</tr>
<tr>
<td>EC10D</td>
<td>Introduction to Economics I</td>
<td>“</td>
</tr>
<tr>
<td>EC16A</td>
<td>Introduction to Statistics</td>
<td>“</td>
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<tr>
<td>CHEM 1060 (C11C)</td>
<td>Introductory Chemistry I</td>
<td>(6 credits)</td>
</tr>
<tr>
<td>CHEM 1061 (C11D)</td>
<td>Introductory Chemistry II</td>
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</tr>
<tr>
<td>COMP 1011</td>
<td>Introduction to Information Technology</td>
<td>(3 credits)</td>
</tr>
</tbody>
</table>

(CS11M, CS11N)

TOTAL YEAR I CREDITS (30)

LEVEL II

a. CHEM 2160 (C20A) Main Group Chemistry (4 credits)
   CHEM 2260 (C20B) Organic Chemistry “
   CHEM 2360 (C20C) Physical Chemistry “
   CHEM 2015 (C20D) Spectroscopy “
   CHEM 2025 (C20E) Kinetics & Mechanism “

b. MS22A Organisational Behaviour (3 credits)
   MS23C Quantitative Methods “
   MS26A Managerial Economics “
   MS27A Business Law “
   MS20A Principles of Marketing “
   MS28D Financial Management “
   MS39M Production and Operations Management (3 credits)
   MS39P Operations Planning and Control “
c. Twelve (12) credits from CHEM 3000 (C30) level courses which must include at least eight (8) credits from CHEM 3160 (C30A), CHEM 3260 (C30B) CHEM 3360 (C30C).

d. Two other Management Studies courses chosen from Year II and III (6 credits).

f. Nine (9) credits of Foundation Courses: FD11B, FD13A, FD11A.

**TOTAL DEGREE CREDITS**  (101)
DEPARTMENT OF LIFE SCIENCES

Dr. G. Sirju-Charran  
(Head)

Mrs. R. Ali-Hassan  
(Secretary)

Tel: (868) 645-3232  Ext. 3111, 3110  
Fax: (868) 663-5241

G. Sirju-Charran,  
B.Sc., Ph.D. (UWI)  
Head, Department of Life Sciences,  
Subject Leader & Senior Lecturer, Plant Sciences

Vacant  
Professor of Zoology

E.J. Duncan  
B.Sc. (Lond – UCWI), Ph.D. (St. Andrews)  
Professor Emeritus, Botany

C.R. McDavid,  
B.Sc., Ph.D. (Wales)  
Professor, Plant Sciences

J.B. Agard,  
B.Sc. (UWI), M.Sc. (Manch.), Ph.D. (UWI)  
Senior Lecturer, Zoology & Subject Leader (Environmental Studies)

V.J. Bowrin  
B.Sc. (UWI), Ph.D. (Purdue)  
Lecturer, Biochemistry

I.W. Ramnarine,  
B.Sc. (UWI), M.Sc. (Wales), Ph.D. (UWI), MBA (Heriot-Watt)  
Senior Lecturer, Zoology

C.K. Starr,  
BA (Carleton), MA (Kansas), Ph.D. (Georgia)  
Senior Lecturer, Zoology & Subject Leader (Zoology)

P. Umaharan,  
B.Sc. (Peradeniya), Ph.D. (UWI)  
Senior Lecturer, Plant Sciences & Subject Leader (Biology)

M. Alkins-Koo,  
B.Sc. (UWI), M.Sc. (Lond.), Ph.D. (UWI)  
Lecturer, Zoology

G.F. Barclay,  
BA (Mt Allison), Ph.D. (Aberdeen)  
Lecturer, Plant Sciences

B. Cockburn,  
B.Sc., Ph.D. (UWI)  
Lecturer, & Subject Leader Biochemistry
Y. Comeau,  
B.Sc., M.Phil. (UWI)

Curator,  
National Herbarium,  
Lecturer, Plant Sciences

Ms C. Commissiong  
Secretary,  
Life Sciences

D.T. Phillip  
B.Sc., M. Phil. (UWI),  
Ph.D. (St. Andrews)

Lecturer,  
Zoology

Ms M. Dare-Assing  
Clerical Assistant,  
Life Sciences

A. Khan,  
B.Sc., Ph.D. (UWI)

Lecturer,  
Plant Sciences

A. Ramsubhag  
B.Sc., Ph.D. (UWI)

Lecturer,  
Plant Sciences

J. Rouse-Miller,  
B.Sc., M. Phil (UWI)

Lecturer,  
Plant Sciences

A. Hailey  
B.Sc. (Lond) Ph.D. (Nottingham)

Lecturer,  
Zoology

A. Lennon  
B.Sc. D.Phil (Sussex)

Lecturer,  
Biochemistry

J. Rampersad  
B.Sc. (UWI) M.Sc.

Asst. Lecturer,  
Life Sciences

J. Gobin  
B.Sc., M.Phil (UWI), Ph.D. (Exeter)

Temporary Lecturer

A. Mohammed  
B.Sc., Ph.D. (UWI)

Temporary Assistant Lecturer

Ms R. Ali-Hassan  
Secretary,  
Life Sciences

Vacant  
Secretary,  
Life Sciences
MAJORS IN LIFE SCIENCES
The Department offers majors in:
Biochemistry
Biology
Botany
Environmental & Natural Resource Management
Zoology

Students can pursue double majors in Biology or between any two majors within Life Sciences, except Biology & Botany, and Biology & Zoology. Students can also select a single major in Life Sciences with another major from any other Department within the Faculty or outside the Faculty provided the student has the Prerequisites.

LIST OF MINORS OFFERED IN THE DEPARTMENT OF LIFE SCIENCES
Students wishing to elect minors offered from the Department of Life Sciences must have passed the Prerequisites for the courses selected.

Minors are offered in all disciplines in Life Sciences (Biochemistry, Biology, Botany, Environmental & Natural Resource Management and Zoology). A minor is defined as any sixteen (16) credits from the core of the discipline. In addition, minors are being offered in Biotechnology, Marine Biology, and Environmental Biology.

Students majoring in Biology may also follow any minor including Botany and/or Zoology.

Note: Research projects (BIOL 3069 (BL11D)/AG312) done under a relevant area may be considered towards the minor.

INTRODUCTORY COURSES IN LIFE SCIENCES

SEMESTER I

<table>
<thead>
<tr>
<th>Credits</th>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>6</td>
<td>BIOL1061 (BL11D)</td>
<td>Cell Biology and Genetics</td>
</tr>
<tr>
<td>6</td>
<td>BIOL 1861 (BL11E)</td>
<td>Animal Diversity</td>
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SEMESTER II

<table>
<thead>
<tr>
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<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>BIOL 1764 (BL11F)</td>
<td>Diversity of Green Plants</td>
</tr>
<tr>
<td>6</td>
<td>BIOL 1462 (BL11G)</td>
<td>General Ecology and Biometry</td>
</tr>
</tbody>
</table>

• Students wishing to major in Biochemistry should have BIOL1061 (BL11D), C11C and at least one other Introductory Life Science course.

• Students wishing to major in Biology should have all four (4) Introductory courses in Life Sciences (BIOL1061 (BL11D), BIOL 1861 (BL11E), BIOL 1764 (BL11F), BIOL 1462 (BL11G)).

• Students wishing to major in Botany or Zoology should have at least three (3) of the four (4) Introductory courses in Life Sciences (BIOL1061 (BL11D), BIOL 1462 (BL11G) and BIOL 1764 (BL11F) for Botany or BIOL1061 (BL11D), BIOL 1462 (BL11G) and BIOL 1861 (BL11E) for Zoology).

• Students wishing to major in Environmental & Natural Resource Management along with any other major in Life Sciences should, in addition to the four Introductory courses listed, have AS16B Soils & the Environment, AM17B Introduction to Agro-Environmental Management and AM13A Introduction to Microeconomics. Students wishing to double major in Zoology and Environmental & Natural Resources Management should have AG13B Microbiology I in addition to the above. AG13B may be done in Semester I of Year 1 or Year 2.

• Students wishing to major in Environmental & Natural Resource Management alone or with any major in Natural Sciences (other than Life Sciences or Agriculture) should take the following Introductory courses:
INTRODUCTORY COURSES
IN ENVIRONMENT & NATURAL RESOURCE MANAGEMENT

SEMESTER I

<table>
<thead>
<tr>
<th>Course Code (Code)</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIOL 1065 (BL12A)</td>
<td>Diversity of Plants and Animals</td>
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<tr>
<td>AGBU 1000 (AM13A)</td>
<td>Introduction to Microeconomics</td>
<td>2</td>
</tr>
<tr>
<td>AGRI 1001 (AG13B)</td>
<td>Microbiology I</td>
<td>2</td>
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<tr>
<td>AGSL 1000 (AS16B)</td>
<td>Soils and the Environment</td>
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SEMESTER II

<table>
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<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>BIOL 1462 (BL11G)</td>
<td>General Ecology &amp; Biometry</td>
<td>6</td>
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<tr>
<td>AGBU 1002 (AM17B)</td>
<td>Introduction to Agro-Environmental Management</td>
<td>4</td>
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ADVANCED COURSES IN LIFE SCIENCES

CORE COURSES

BIOCHEMISTRY MAJOR

SEMESTER I

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<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 2361 (BC22A)</td>
<td>Biomolecules and Energy Metabolism</td>
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<td>BIOL 2363 (BC23A)</td>
<td>Metabolism</td>
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<td>BIOL 3361 (BC33A)</td>
<td>Applied Biochemistry</td>
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<tr>
<td>BIOL 3061 (BL38C)</td>
<td>Molecular Biology</td>
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SEMESTER II

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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 2362 (BC22B)</td>
<td>Further Metabolism &amp; Gene Expression</td>
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<tr>
<td>BIOL 2364 (BC23B)</td>
<td>Advanced General Biochemistry</td>
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<tr>
<td>BIOL 3362 (BC38B)</td>
<td>Selected Topics in Biochemistry</td>
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BIOLOGY MAJOR

SEMESTER I

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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 2162 (BL27B)</td>
<td>Advanced Genetics</td>
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<tr>
<td>BIOL 2862 (Z21F)</td>
<td>Animal Physiology</td>
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<tr>
<td>BIOL 3662 (BL36B)</td>
<td>Evolution &amp; Biosystematics</td>
<td></td>
</tr>
<tr>
<td>BIOL 3062 (Z 36B)</td>
<td>Conservation Biology</td>
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</table>

SEMESTER II

<table>
<thead>
<tr>
<th>Course Code (Code)</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 2761 (BT27A)</td>
<td>Plant Physiology</td>
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</tr>
<tr>
<td>BIOL 2261 (BL28C)</td>
<td>Biology of Micro-organisms</td>
<td></td>
</tr>
<tr>
<td>BIOL 3761 (BT31C)</td>
<td>Functional Design in Plants</td>
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</tbody>
</table>

BOTANY MAJOR

CORE COURSES

Students double majoring in Botany and Zoology will require one additional elective from the Zoology elective list instead of BL36B Evolution & Biosystematics.

SEMESTER I

<table>
<thead>
<tr>
<th>Course Code (Code)</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIOL 2761 (BT27A)</td>
<td>Plant Physiology</td>
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</tr>
<tr>
<td>BIOL 2261 (BL28C)</td>
<td>Biology of Micro-organisms</td>
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</tr>
<tr>
<td>BIOL 3761 (BT31C)</td>
<td>Functional Design in Plants</td>
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SEMESTER II

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<tr>
<th>Course Code (Code)</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 2162 (BL27B)</td>
<td>Advanced Genetics</td>
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</tr>
<tr>
<td>BIOL 3464 (BT37E)</td>
<td>Tropical Forest Ecology and Management</td>
<td></td>
</tr>
<tr>
<td>BIOL 3662 (BL36B)</td>
<td>Evolution &amp; Biosystematics</td>
<td></td>
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</tbody>
</table>
**ENVIRONMENTAL & NATURAL RESOURCE MANAGEMENT MAJOR**

*(WITH CONTRIBUTIONS FROM THE DEPARTMENTS OF FOOD PRODUCTION AND AGRICULTURAL ECONOMICS & EXTENSION)*

**CORE COURSES**

<table>
<thead>
<tr>
<th>SEMESTER I</th>
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<tbody>
<tr>
<td>BIOL 2461 (Z24B)</td>
<td>Humans &amp; the Environment</td>
</tr>
<tr>
<td>AGSL 3004 (AS34D)</td>
<td>Integrated Watershed Management</td>
</tr>
<tr>
<td>BIOL 3463 (BL39B)</td>
<td>Pollution and Environmental Management</td>
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<table>
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<th>SEMESTER II</th>
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</thead>
<tbody>
<tr>
<td>AGSL 3002 (AS33D)</td>
<td>Soil Survey &amp; Land Evaluation</td>
</tr>
<tr>
<td>BIOL 3464 (BT37E)</td>
<td>Tropical Forest Ecology &amp; Management</td>
</tr>
<tr>
<td>BIOL 3062 (Z 36B)</td>
<td>Conservation Biology</td>
</tr>
</tbody>
</table>

**ELECTIVES**

| BIOL 2063 (Z23C)   | Marine Ecology                          |
| BIOL 3069 (BL33B)  | Research Project                        |
| AM39A              | Environmental Economics                  |
| AGRI 2001 (AG39A)  | Climate Change Impact and Management     |
| AGBU 3000 (AM33D)  | Ecotourism                               |
| BIOL 2062 (Z23B)   | Freshwater Biology                       |
| BIOL 3461 (Z31A)   | Coastal Ecosystem Management             |
| BIOL 3864 (Z34D)   | Fisheries Biology & Management           |
| AGEX 2001 (AX25B)  | Operations and Management of             |
|                    | Extension Programmes                     |
| CHEM 3560 (C30E)   | Environmental Chemistry                  |

**ZOOOLOGY MAJOR**

**CORE COURSES**

*(Students double majoring in Botany and Zoology will require one additional elective from the Zoology elective list instead of BIOL 3662 (BL36B) Evolution & Biosystematics.)*

<table>
<thead>
<tr>
<th>SEMESTER I</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 2861 (Z1E)</td>
<td>Functional Design in Animals</td>
</tr>
<tr>
<td>BIOL 3861 (Z33E)</td>
<td>Animal Behaviour</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>SEMESTER II</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 2862 (Z21F)</td>
<td>Animal Physiology</td>
</tr>
<tr>
<td>BIOL 3662 (BL36B)</td>
<td>Evolution &amp; Biosystematics</td>
</tr>
</tbody>
</table>
## LIST OF ELECTIVES BY SEMESTER
for Biology, Botany and Zoology Majors

### SEMESTER I

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3069 (BL33B)</td>
<td>Research Project</td>
<td></td>
</tr>
<tr>
<td>BIOL 3061 (BL38C)</td>
<td>Molecular Biology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3865 (BL39A)</td>
<td>Animal Biotechnology</td>
<td></td>
</tr>
<tr>
<td>BIOL 3763 (BT38L)</td>
<td>Crop Improvement</td>
<td></td>
</tr>
<tr>
<td>BIOL 3765 (BT38G)</td>
<td>Plant Pathology</td>
<td>(not offered in 2005/05)</td>
</tr>
<tr>
<td>BIOL 2063 (Z23C)</td>
<td>Marine Ecology</td>
<td>(Limited to 60 students)</td>
</tr>
<tr>
<td>BIOL 2461 (Z24B)</td>
<td>Humans &amp; the Environment</td>
<td></td>
</tr>
<tr>
<td>BIOL 3461 (Z31A)</td>
<td>Coastal Ecosystem Management</td>
<td></td>
</tr>
<tr>
<td>BIOL 3463 (BL39B)</td>
<td>Pollution and Environmental Management</td>
<td></td>
</tr>
<tr>
<td>BIOL 3863 (Z34E)</td>
<td>Tropical Aquaculture</td>
<td>(not offered in 2004/05)</td>
</tr>
<tr>
<td>BIOL 2861 (Z21E)</td>
<td>Functional Design in Animals</td>
<td></td>
</tr>
<tr>
<td>BIOL 3761 (BT31C)</td>
<td>Functional Design in Plants</td>
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### SEMESTER II

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>BIOL 3069 (BL33B)</td>
<td>Research Project</td>
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</tr>
<tr>
<td>BIOL 3262 (BL38J)</td>
<td>Microbial Biotechnology</td>
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</tr>
<tr>
<td>BIOL 3062 (Z 36B)</td>
<td>Conservation Biology</td>
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<tr>
<td>BIOL 3762 (BT36D)</td>
<td>Plant Biotechnology</td>
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</tr>
<tr>
<td>BIOL 3764 (BT38E)</td>
<td>Economic Botany</td>
<td></td>
</tr>
<tr>
<td>BIOL 2062 (Z23B)</td>
<td>Freshwater Biology</td>
<td>(limited to 60 students)</td>
</tr>
<tr>
<td>BIOL 2462 (Z24A)</td>
<td>Caribbean Island Ecology</td>
<td>(Not offered in 2004/05)</td>
</tr>
<tr>
<td>BIOL 3461 (Z31A)</td>
<td>Coastal Ecosystem Management</td>
<td>(Not offered in 2004/05)</td>
</tr>
<tr>
<td>BIOL 3864 (Z34D)</td>
<td>Fisheries Biology &amp; Management</td>
<td>(not offered in 2004/05)</td>
</tr>
<tr>
<td>BIOL 3463 (BL39B)</td>
<td>Pollution and Environmental Management</td>
<td></td>
</tr>
<tr>
<td>GENS 3260 (NS21B)</td>
<td>Gender and Science</td>
<td></td>
</tr>
<tr>
<td>BIOL 2866 (Z 22B)</td>
<td>Entomology</td>
<td>(not offered in 2004/05)</td>
</tr>
<tr>
<td>BIOL 2864 (Z22C)</td>
<td>Parasitism</td>
<td></td>
</tr>
<tr>
<td>BIOL 3464 (BT37E)</td>
<td>Tropical Forest Ecology and Management</td>
<td></td>
</tr>
</tbody>
</table>
DEPARTMENT OF
MATHEMATICS
& COMPUTER SCIENCE

Prof. Balswaroop Bhatt
(Head)

Ms. S. Mohammed
(Secretary)

Tel: (868) 645-3232  Exts.  3553, 2048, 2049
Fax: (868) 645-7132
Email: dmcs@fans.uwi.tt

B. Bhatt
B.Sc., M.Sc., Ph.D.
(University of Rajasthan)

E. J. Farrell
B.Sc. UWI, M.Math, Ph.D.
Wat, FTICA

Ch. Posthoff
Dip.-Math., Dr. rer. nat.,
University Leipzig., Dr.-Ing. habil.,
University Chemnitz

H. Ramkissoon
B.Sc. (UWI), M.Sc. (Tor),
Ph.D. (Calg)

N. Kalicharan
B.Sc. (UWI), M.Sc. (Br Col),
Ph.D. (UWI)

M. Bernard
B.Sc., M.Phil., Ph.D., (UWI)

M. Hosein
B.Sc., M.Phil. (UWI),
M.C.S.E., MCP + I

B. Iordanova
B.Eng (Varna),
Ph.D. (Huddersfield)

P. Mohan
B.Sc. (UWI), M.Sc. (Sask),
Ph.D. (UWI)
COMPUTER SCIENCE

MAJOR OR DOUBLE MAJOR OR IN COMPUTER SCIENCE
The requirements for a major in Computer Science are:-

For the major, students are required to take the six (6) core courses (24 credits) which include COMP 2000, COMP 2100, COMP 2200, COMP 2500, COMP 3000 and COMP 3100 plus another eight (8) advanced credits, for a total of 32 credits. For the double major, students are required to take 64 credits in Computer Science courses including the core courses.

MINOR IN COMPUTER SCIENCE
Students are required to take the two (2) core courses COMP 2000 and COMP 2500 plus any two (2) of the following courses: COMP 2200, COMP 2700, COMP 3000, COMP 3100, COMP 3150 and COMP 3250.

COMPUTER SCIENCE
The following courses are likely to be taught in 2003/2004:

SEMESTER I

Introductory Part
COMP 1011 (CS10M) Introduction to Information Technology
COMP 1100 (CS11E) Computer Programming I
COMP 1200 (CS11F) Computer Programming II

Advanced Part
COMP 2000 (CS20A) Data Structures
COMP 2100 (CS20E) Discrete Mathematics for Computer Science
COMP 2200 (CS21E) Computer Architecture
COMP 2300 (CS22A) Programming for Business Applications
COMP 2600 (CS25E) Theory of Computing I
COMP 2700 (CS27E) Database Management Systems I
COMP 3100 (CS31A) Operating System
COMP 3400 (CS33B) Artificial Intelligence
COMP 3300 (CS33E) Programming Languages I
COMP 3500 (CS34M) Internet Technologies I
COMP 3750 (CS37A) Numerical Computing
SEMESTER II

**Introductory Part**
- COMP 1011 (CS10M) Introduction to Information Technology
- COMP 1100 (CS11E) Computer Programming I
- COMP 1200 (CS11F) Computer Programming II

**Advanced Part**
- COMP 2000 (CS20A) Data Structures
- COMP 2100 (CS20E) Discrete Mathematics for Computer Science
- COMP 2400 (CS22B) Information Systems
- COMP 2500 (CS24E) Object-Oriented Programming
- COMP 3000 (CS30E) Design and Analysis of Algorithms
- COMP 3150 (CS32A) Computer Networks
- COMP 3250 (CS32F) Software Engineering
- COMP 3350 (CS33F) Programming Languages II
- COMP 3550 (CS34N) Internet Technologies II
- COMP 3600 (CS35E) Theory of Computing II
- COMP 3700 (CS37E) Database Management Systems II
- COMP 3900 (CS39A) Special Topics in Computer Science (Expert Systems)

**Mathematics**

**Major in Mathematics**
Students are required to take 4 core courses in MATH 2100, MATH 2110, MATH 2120, MATH 2160 and acquire sixteen (16) credits from other advanced courses in Mathematics. At least 8 of these 16 credits must be from Year 3 Mathematics courses.

**Double Major in Mathematics**
Students are required to take 64 credits from Advanced Level Mathematics courses including MATH 2100, MATH 2110, MATH 2120 and MATH 2160. At least 32 credits must be from Year 3 Mathematics courses.

**Minor in Mathematics**
Students are required to do any two core courses including either MATH 2100 or MATH 2110 and any two other Mathematics courses at Advanced Level.

**Mathematics**
The following courses are likely to be taught in 2003/2004:

**Semester I**

**Preliminary & Introductory Part**
- MATH 0100 (M08B) Pre-Calculus
- MATH 1140 (M12A) Basic Introductory Mathematics
- MATH 1160 (M 15A) Introductory Applied Mathematics I

**Advanced Part**
- MATH 2100 (M 20A) Abstract Algebra
- MATH 2120 (M 21A) Analysis & Mathematical Methods I
- MATH 2170 (M 24A) Introduction to Combinatorics
- MATH 2140 (M 25A) Introduction to Probability
- MATH 2190 (M 25C) Probability and Statistics I
- MATH 2210 (M 29A) Mathematics of Finance
- MATH 3110 (M 31A) Mathematical Statistics - Probability Theory
- MATH 3240 (M 31S) Real Analysis
- MATH 3250 (M 33A) Fluid Dynamics I
- MATH 3280 (M33D) Introduction to Mathematical Modelling I
- MATH 3400 (M 34B) Graph Theory
- MATH 3430 (M 34E) Advanced Algebra I - Theory
- MATH 3450 (M 35A) Statistical Theory I

Students reading courses in Mathematics and Computer Science in the Faculty of Science & Agriculture are advised to clear with the Head, Department of Mathematics & Computer Science, before registering for any course in the Faculty of Social Sciences that involves Mathematics, Computing or Statistics.
OPTION II

COMPUTER SCIENCE AND MANAGEMENT

Note:
(1) Acceptance for the Computer Science and Management option does not guarantee acceptance for advanced courses in the Faculty of Social Sciences.

(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.’ E.g. EC20B and MS26A.

INTRODUCTORY PART

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 1100 (CS11E) Computer Programming I</td>
<td>6</td>
</tr>
<tr>
<td>COMP 1200 (CS11F) Computer Programming II</td>
<td>6</td>
</tr>
<tr>
<td>ECON 1001 (EC10D) Introduction to Economics I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 1002 (EC10F) Introduction to Economics II</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 1010 (MS15E) Introduction to Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 1011 (MS15F) Introduction to Cost &amp; Management Accounting</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1140 (M 12A) Basic Introductory Mathematics</td>
<td>6</td>
</tr>
<tr>
<td>MATH 1150 (M 12B) Functions of Real Variables</td>
<td>6</td>
</tr>
</tbody>
</table>

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ADVANCED PART

1. COMP 2000 (CS20A) Data Structures                        | 4       |
    COMP 2100 (CS20E) Discrete Mathematics for Computer Science | 4       |
    COMP 2200 (CS21E) Computer Architecture                  | 4       |
    COMP 2300 (CS22A) Programming for Business Applications  | 4       |
    COMP 2500 (CS24E) Object-Oriented Programming             | 4       |
    COMP 2700 (CS27E) Database Management Systems I           | 4       |
    COMP 3000 (CS30E) Design and Analysis of Algorithms      | 4       |
    COMP 3100 (CS31A) Operating Systems                      | 4       |

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2. MKTG 2080 (MS20A) Principles of Marketing 3  
   MGMT 2014 (MS22A) Organisational Behaviour 3  
   MGMT 2020 (MS26A) Managerial Economics 3  
   MGMT 2021 (MS27A) Business Law 3  
   **and one from**  
   MGMT 2018 (MS23C) Quantitative Methods 3  
   ACCT 2043 (MS25C) Management Accounting 3  
   FINM 2060 (MS28D) Financial Management 3  
   MKTG 3140 (MS30A) Marketing Management 3  

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3. A minimum of thirteen (13) credits chosen from  
   Level II/III Computer Science,  
   Mathematics and Economics courses 13

4. Foundation Courses  
   FD11B Academic Writing for  
   Different Disciplines 3  
   FD13A Law, Governance, Economy  
   and Society 3  
   FD11A Caribbean Civilisation 3  

**TOTAL DEGREE CREDITS** 105

**NOTE:** Students majoring in Computer Science and those  
registered in the Computer Science and Management option must seek the approval of the department to read  
Computing and Mathematics courses outside of the FSA.
DEPARTMENT OF PHYSICS

Dr. A. Achong  
(Head)

Mrs. D. Davis  
(Secretary)

Tel: (868) 645-3232 Ext. 2050, 2051  
Fax: (868) 662-9904

Anthony Achong,  
B.Sc., Ph.D. (UWI)  
Head of Department, Lecturer

R. Saunders,  
B.Sc. (UWI), Ph.D. (Lond. DIC)  
Professor

I. Ali Mc Doom,  
B.Sc. (Lond-UCWI), M.Sc., Ph.D., (UWI)  
Senior Lecturer

R. Andrews,  
B.Sc., Ph.D. (Lond.)  
Lecturer

R. Clarke,  
B.Sc., M.Phil. (UWI)  
Lecturer

K. De Souza,  
B.Sc., M.Sc., (UWI), Ph.D. (Southhampton)  
Lecturer

S. Haque-Copilah,  
B.Sc., M.Phil., Ph.D. (UWI)  
Lecturer

J.C. Knight,  
B.Sc. (UWI), Ph.D. (Camb.)  
Senior Lecturer

A.H. Tang Kai,  
B.Sc., M.Sc., (UWI), Ph.D., (Uppsala)  
Senior Lecturer

Mrs. D. Davis  
Secretary

Mrs. S. Perai  
Secretary
**PHYSICS**
The following list indicates courses to be taught in 2003/2004:-

### SEMESTER I
- **PHYS0070 (P07A)** Preliminary Physics I
- **PHYS1110 (P11A)** Introductory Physics I
- **PHYS2280 (P28A)** Mathematical Methods in Physics
- **PHYS2281 (P28B)** Modern Physics I
- **PHYS2290 (P29A)** Introduction to Medical Physics and Bioengineering
- **PHYS2291 (P29B)** Digital Electronics
- **PHYS2292 (P29C)** Meteorology, Climatology and Pollution
- **PHYS2294 (P29E)** Materials Science
- **PHYS3382 (P38C)** Electronics and Control Theory
- **PHYS3385 (P38F)** Electromagnetism Theory & Applications
- **PHYS3387 (P38P)** Research Project (for Physics Majors)
- **PHYS3390 (P39A)** Further Medical Physics and Bioengineering II
- **PHYS3392 (P39C)** Physical Oceanography and Geohydrology
- **PHYS3396 (P39G)** Ceramics

### SEMESTER II
- **PHYS0071 (P07B)** Preliminary Physics II
- **PHYS1111 (P11B)** Introductory Physics II
- **PHYS2282 (P28C)** Circuit Theory and Electronics
- **PHYS2283 (P28D)** Oscillation, Waves and Optics
- **PHYS2293 (P29D)** Fundamentals of Geophysics
- **PHYS2295 (P29F)** Lasers and Solar Energy
- **PHYS3381 (P38B)** Modern Physics II
- **PHYS3383 (P38D)** Optics and Astronomy
- **PHYS3384 (P38E)** Thermodynamics and Solid State Physics
- **PHYS3391 (P39B)** Further Digital Electronics and Microprocessor Systems
- **PHYS3393 (P39D)** Earth Materials, Earth Processes and Seismology
- **PHYS3394 (P39E)** Further Materials Science
- **PHYS3395 (P39F)** Thin Films and Vacuum Physics

PHYS2292 (P29C) with PHYS2293 (P29D) and PHYS3392 (P39C) with PHYS3393 (P39D) are offered in alternate years. In the year 2004/2005 PHYS3392 (P39C) and PHYS3393 (P39D) will be offered.

PHYS2290 (P29A) and PHYS3390 (P39A) are offered in alternate years. PHYS2290 (P29A) will be offered in the year 2004/2005.

PHYS3395 (P39F) will not be offered in 2004/2005.

**N.B.: Students reading PHYS2294 (P29E), cannot reach read CH13A listed In Appendix IV.**

PHYS2291 (P29B) may be read by any Level II and Level III students of the University. However, Level I students may also read this course provided that General Regulation 15(c) is satisfied.

Students repeating P28 and P29 courses may be permitted, after a departmental interview, to read appropriate P38 and P39 courses at the same time.

* Taught by School of Continuing Studies.

### PHYSICS
**PRELIMINARY PHYSICS**
- **PHYS0070 (P070A)** Preliminary Physics I
- **PHYS0071 (P071B)** Preliminary Physics II

### FIRST YEAR PHYSICS
- **PHYS1110 (P11A)** Introductory Physics I 6 credits
- **PHYS1111 (P11B)** Introductory Physics II 6 credits

### MAJOR OR IN PHYSICS
- **PHYS2280 (P28A)** Mathematical Methods in Physics I 4 credits
- **PHYS2281 (P28B)** Modern Physics I 4 credits
- **PHYS2283 (P28D)** Oscillation, Waves and Optics 4 credits
- **PHYS3385 (P38F)** Electromagnetism Theory & Applications 4 credits
- **PHYS3387 (P38P)** Research Project (available to Physics majors only) 4 credits

And any three (3) of:
- **PHYS2282 (P28C)** Electricity & Magnetism and Electronics 4 credits
- **PHYS3381 (P38B)** Modern Physics II 4 credits
- **PHYS3383 (P38D)** Optics and Astronomy 4 credits
- **PHYS3384 (P38E)** Thermodynamics and Solid State Physics 4 credits
OPTIONS/ MINORS

Prerequisites: PHYS1110 (P11A), PHYS1111 (P11B)
Corequisites: PHYS2280 (P28A) or MATH1150 (M12B)
and M21C

ELECTRONICS

PHYS2291 (P29B) Digital Electronics 4 credits
PHYS3382 (P38C) Electronics & Control Theory 4 credits
PHYS2282 (P28C) Circuit Theory and Electronics 4 credits
PHYS3391 (P39B) Further Digital Electronics & Microprocessor Systems 4 credits

MEDICAL PHYSICS AND BIOENGINEERING

PHYS2290 (P29A) Introduction to Medical Physics and Bioengineering 4 credits
PHYS2291 (P29B) Digital Electronics 4 credits
PHYS3391 (P39B) Further Digital Electronics & Microprocessor Systems 4 credits
PHYS3390 (P39A) Further Medical Physics and Bioengineering 4 credits

ENVIRONMENTAL PHYSICS

Any four (4) of:
PHYS2292 (P29C) Meteorology, Climatology and Pollution 4 credits
PHYS2293 (P29D) Fundamentals of Geophysics 4 credits
PHYS2295 (P29F) Lasers and Solar Energy 4 credits
PHYS3392 (P39C) Physical Oceanography and Geohydrology 4 credits
PHYS3393 (P39D) Earth Materials, Earth Processes and Seismology 4 credits

MATERIALS SCIENCE

Any four (4) of:
PHYS2294 (P29E) Materials Science 4 credits
PHYS2295 (P29F) Lasers and Solar Energy 4 credits
PHYS3394 (P39E) Further Materials Science 4 credits
PHYS3396 (P39G) Ceramics 4 credits
PHYS3395 (P39F) Thin Films and Vacuum Physics 4 credits
ACCT 1010 (MS15E)  
INTRODUCTION TO FINANCIAL ACCOUNTING  
[3 credits]  
**Syllabus:**  
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 thinking and communicative skills.  
**Assessment:**  
Coursework  
Examination

ACCT 1011 (MS15F)  
INTRODUCTION TO COST & MANAGERIAL ACCOUNTING  
[3 credits]  
**Prerequisite:** None  
**Co-requisite:** ACCT 1010 (MS15E)  
**Syllabus:**  
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  
Examination  
ACCT 2043 (MS25C)

ACCT 2043 (MS25C)  
MANAGEMENT ACCOUNTING  
[3 credits]  
**Prerequisites:** ACCT 1010, ACCT 1011 (MS15E,MS15F)  
**Syllabus:**  
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  
Final Examination
AGBU (AM39A)  
ENVIRONMENTAL ECONOMICS  
(4 credits)  

Prerequisites: AGRI 1004 (AG15B) or AGBU/AGEC 1002 (AM17B)  

Syllabus:  
Human beings now face the challenge of sustainable development, where the needs are for cooperative alliances, and recycled waste flows. Environmental economics seeks to meet this challenge, and explores questions such as: “Can we effectively develop policies to deal with the tricky issues of wealth distribution, population growth, international trade and energy in the world where “more growth” is no longer a simple solution?” This course reviews underlying ecological economic theory, and shows how it can be applied to try to solve existing and emerging environmental problems.  

Assessment:  
In-course assessment 40%  
One 2-hour theory examination 60%  

AGBU/ AGEC 1002 (AM17B)  
INTRODUCTION TO  
AGRO-ENVIRONMENTAL MANAGEMENT  
(4 credits)  

Co-requisites: AGBU/AGEC 1000 (AM13A) Introduction to Microeconomics  

Syllabus:  
The role and importance of the environment for social development and as a life support system. The nexus between agriculture and the environment. Agro-ecosystems structure and dynamics. Economics of environmental resources: market failure and environmental degradation, externalities and public goods; optimal resource use/extraction and approaches for management of renewable resources. Concept of the watershed as a management unit: hydrology, soils, natural forest, biodiversity and land use. The impact of agricultural practices on the environment viewed from an ecosystem perspective: deforestation, soil erosion/degradation, flooding, irrigation, loss of biodiversity and climate change. Case studies of impacts related to various agricultural systems: crop and livestock, subsistence and plantation farming, hillside and erodable soils, pesticide and chemical application, irrigated agriculture. Integration of the concepts and issues discussed in designing sustainable agro-environmental systems for the tropics; focus on small island states. Case studies.  

Assessment:  
Coursework 25%  
Final Examination 75%  

AGBU/ AGEC 1000 (AM13A)  
INTRODUCTION TO MICROECONOMICS  
(2 credits)  

Syllabus:  

Assessment:  
Course Work 25%  
Final Examination 75%
AGBU 1003 (AM19A)
APPLIED ANALYTICAL TECHNIQUES
(3 credits)

Syllabus:

Assessment:
Coursework 25%
Final Examination 75%

AGBU 1004 (AM19B)
CONSUMER ECONOMICS
(3 credits)

Prerequisite: AGRI 1004 (AG15B)

Syllabus:

Assessment:
Coursework 25%
Final Examination 75%

AGBU 2000 (AM21A)
AGRICULTURE IN THE ECONOMY
(4 credits)

Prerequisite: AGRI 1004 (AG15B)

Syllabus:

Assessment:
Coursework 20%
Examination 80%

AGBU 2002 (AM23B)
MANAGEMENT AND ECONOMICS
OF AGRICULTURAL PRODUCTION AND MARKETING
(4 credits)

Prerequisite: AGRI 1004 (AG15B)

Syllabus:

Assessment:
Coursework (midterm) 20%
Examination 80%
AGBU 3000 (AM30C)
FARM BUSINESS MANAGEMENT
(4 credits)
Prerequisite: AGRI 1004 (AG15B), AGBU 2002 (AM23B) or AGBU 2000 (AM21A)
Syllabus:
Assessment:
Coursework 20%
Examination 80%

AGBU 3001 (AM32A)
MARKETING AND PRICE ANALYSIS
(4 credits)
Prerequisite: AGRI 1004 (AG15B), AGBU 2000 (AM21A)
Syllabus:
Assessment:
Coursework 20%
Examination 80%

AGBU 3002 (AM32D)
INTERNATIONAL MARKETING OF AGRICULTURAL PRODUCTS
(4 credits)
Prerequisite: AGBU (AM32B) and AGRI 1004 (AG15B) or Introductory Economics
Syllabus:
International Marketing: Institutions and Regulatory Framework; International Marketing Environment: International Market Entry Strategies, Exporting and Importing. This course provides an understanding of the important concepts and issues involved in international marketing of agricultural products. Emphasis is given to the challenges Caribbean agri-businesses will face in the contemporary international business arena and the development/examination of options for successfully penetrating targeted international markets.
Assessment:
Coursework 40%
Examination 60%

AGBU 3003 (AM33D)
INTRODUCTION TO ECOTOURISM: PRODUCT DESIGN & MANAGEMENT
(4 credits)
Prerequisite: No pre-requisites
Syllabus:
This course examines the way in which ecotourism could be designed and developed as a viable business opportunity, and as a contributor to sustainable development in the Caribbean. By the end of the course you should be able to define the concept within a framework of social and economic development. This goal will be achieved by taking you through the various components of ecotourism, highlighting in particular, the business potential of the concept. In this course, you will be supplied with tools to make practical decisions related to an ecotourism venture. No matter what your background maybe, you will find the concepts and perspectives contained in this course empower you to use ecotourism for more positive development. The material is developed with the specific needs of tropical small island states in mind.
Assessment:
In-course 30%
Final Exam 70%

AGBU 3004 (AM34A)
AGRICULTURAL FINANCE & FARM CREDIT
(3 credits)
Prerequisite: AGRI 1004 (AG15B)
Assessment:
Coursework 20%
Examination 80%
AGBU 3005 (AM35B)
INTRODUCTION TO QUANTITATIVE METHODS IN ECONOMICS
(3 credits)
Prerequisite: AGRI 1004 (AG15B)
Assessment:
Coursework
Examination 80%

AGBU 3006 (AM36A)
AGRICULTURAL PROJECT APPRAISAL & IMPLEMENTATION
(4 credits)
Prerequisite: AGRI 1004 (AG15B)
Syllabus: The nature of project appraisal and its role in planning. Financial analysis techniques, benefit cost analysis. Project implementation techniques. Application to cases.
Assessment:
Coursework
Examination 75%

AGBU 3007 (AM37A)
NEW VENTURE CREATION AND MANAGEMENT
(4 credits)
Prerequisite: AG 15B/AM 13A, MS15E
Syllabus: The “hands-on” tools and techniques for launching and managing a sustainable small business. Frameworks and guidelines that can be used to formulate strategies relevant in the contemporary business environment. Emphasis will be placed on real world application of business theory through the building of an effective business plan, case study analysis and interaction with entrepreneurs.
Assessment:
Coursework
Examination 60%

AGBU 3008 (AM39C)
INTERNSHIP
(4 credits)
Prerequisite: AG 133, AM30C
Syllabus: Ten-week attachment to an agri-business firm to gain practical experience and training in an agri-business environment.

AGBU 3012 (AM312)
PROJECT
(4 credits)
Syllabus: A project within a subject area relevant to the student’s degree option.
Assessment:
Project Report
Oral Presentation
See Project Booklet for detailed guidelines

AGCP 2000 (AC23A)
BIOSYSTEMS ENGINEERING PRINCIPLES
(3 credits)
Prerequisite: AG14C
Syllabus: Introduction to biosystems engineering; elementary surveying; farm planning and layout; animal waste management; selection of simple structural members; mechanical power and power units; electrical power and motors; sound and noise; insulation and heat flow; properties of moist air; thermal environment; ventilation and cooling systems for buildings; handling, moisture management and storage of biological products; irrigation; rainfall and management; surface run off; soil erosion and control.
Assessment:
Coursework
Examination 80%
AGCP 2001 (AC24B)
PRINCIPLES OF CROP SCIENCE AND PRODUCTION
(4 credits)
Prerequisite: AG16B and AP13B
Syllabus:
Cropping and cropping systems in the tropics with specific reference to the cropping systems in the Caribbean. Cultural practices employed in the production of tropical crops with emphasis on cereals and legumes. Methods of propagation, sexual and asexual, micro and macro propagation techniques. Seed production and storage. Principles involved in breeding and maintaining economic crops. Genetic engineering for crop improvement.
Assessment:
Coursework: 40%
Examination: 60%

AGCP 2002 (AC25A)
FIELD AND VEGETABLE CROP TECHNOLOGY PRODUCTION
(4 credits)
Prerequisite: AG16B
Syllabus:
Identification of currently and potentially important tropical field and vegetable crops. Economic importance, distribution, botany, environmental requirements. Alternative production technologies. Utilisation, research needs and current research and development activities.
Assessment:
Coursework: 20%
Examination: 80%

AGCP 2003 (AC26B)
MECHANISATION FOR CROP PRODUCTION
(3 credits)
Prerequisites: AG14C and AC23A
Syllabus:
Principles of design, construction, operation and maintenance of power units and machinery for crop production. Management of machinery: determination of machinery requirements; machinery selection, performance and costs of use. Machinery for field operations; tillage, seed bed preparation, cultivation seeding and planting, chemical application and harvesting. Analysis and development of mechanised production systems with special reference to crop production in the Caribbean.
Assessment:
Coursework: 20%
Examination: 80%

AGCP 3001 (AC31A)
VEGETABLE PRODUCTION
(4 credits)
Prerequisite: AG16B and AC24B
Syllabus:
Assessment:
Coursework: 40%
Examination: 60%
AGCP 3002 (AC32E)  
CROP PRODUCTION SYSTEMS  
(4 credits)  
Prerequisite: AG16B and AC24B  
Syllabus:  
The role of crop production in agricultural development. The linkage between the cropping system, the farming system and the agricultural system. Major factors influencing cropping system development. Typologies of cropping systems in the tropics and the social, economic, natural resource; requirement and technological aspects of cropping systems for selected tropical crops. Approaches to evaluating cropping systems. Cropping system design for improving and sustaining productivity. New paradigms, including organic farming and integrated crop management and precision agriculture.  
Assessment:  
Coursework: 40%  
Examination: 60%  

AGCP 3003 (AC32F)  
POSTHARVEST SYSTEMS  
(3 credits)  
Prerequisite: AP10B and AG22C  
Syllabus:  
A study of changes that occur in horticultural crops between harvest and the consumer. Development of post harvest handling systems for vegetables, herbs and spices, climacteric fruits, fresh cut fruit and vegetables, cut flowers and foliage plants, grain and cereals, and root crops. A study of the impact of post harvest technology on systems development.  
Assessment:  
Coursework: 40%  
Examination: 60%  

AGCP 3004 (AC32G)  
INTRODUCTION TO FLORICULTURE  
(3 credits)  
Prerequisite: AG16B  
Syllabus:  
The status of the international floriculture industry with special attention to the Caribbean and the importance of tropical species. People plant relations. Greenhouse production of potted foliage and flowering plants, greenhouse selection, management of the greenhouse environment, crop scheduling and management. Field production of cut flowers and cut foliage. After-sales potted plant care, post harvest management and Utilisation of cut flowers.  
Assessment:  
Course work: 40%  
Examination: 60%  

AGCP 3005 (AC32H)  
LANDSCAPE AND TURFGRASS MANAGEMENT  
(3 credits)  
Prerequisite: AG16B  
Syllabus:  
The role of plants in human well-being, the importance of the landscape industry and the use of plants in private and public spaces. The history of gardens and garden design. Plant identification techniques. Tree and shrub growth, development selection, establishment and maintenance. Turfgrass and ground cover growth and development, selection, establishment and maintenance. The elements and principles of landscape design, design process; uses of plant materials in landscape design. Landscape installation and maintenance.  
Assessment:  
Course work: 40%  
Examination: 60%
AGCP 3006 (AC32J)  
PRINCIPLES OF FRUIT CROP PRODUCTION  
(4 credits)  
Prerequisite: AG16B and AL21C  
Syllabus:  
Introduction to the status of fruit crop industry with specific reference to tropical crops. The role of fruits in human nutrition. The scientific principles of fruit crop growth and yield development. Production principles and technologies used in commercial fruit crop enterprises for selected fruits. Assessment of the commercial potential of minor fruits. Current issues and research needs of tropical fruit crops.  
Assessment:  
Coursework:  
40%  
Examination:  
60%  

AGCP 3010 (AC38A)  
ORNAMENTAL HORTICULTURE  
(3 credits)  
Syllabus:  
Economic and social importance of ornamental horticulture. History of gardens. Establishment and maintenance of ornamental plantings inclusive of trees, shrubs, turf and ground covers, and potted plants. Introduction to landscape design. Tropical floriculture for domestic and export markets including post harvest handling.  
Assessment:  
Coursework:  
40%  
Examination:  
60%  

AGCP 3013 (AC313)  
RESEARCH PROJECT (CROPS)  
(3 credits)  
AGEX (AX508)  
RURAL SOCIAL SYSTEMS  
(4 credits)  
Syllabus:  
A systems approach in the analysis of rural social relations. Definition and discussion of primary and secondary groups, roles and social status, geographic and cultural communities. Rural-urban drift and immigration processes. Structural and social Caribbean rural development. Policy issues and programmes in the promotion of integrated rural development.  
Assessment:  
Coursework:  
25%  

AGEX 2001 (AX25B)  
OPERATION AND MANAGEMENT OF EXTENSION PROGRAMMES  
(4 credits)  
Prerequisite:  
Syllabus:  
Assessment:  
Coursework:  
40%  
Examination:  
60%
AGEX 3000 (AX30A)
TECHNOLOGY TRANSFER IN AGRICULTURE
(3 credits)
(Department of Agricultural Economics and Extension)
Syllabus:
Assessment:
Coursework 25%
Examination 75%

AGEX 3001 (AX35A)
ISLAND FOOD SYSTEMS
(3 credits)
Prerequisite:
Syllabus:
An understanding of island food systems of the Tropical World, from the view point of their sustainability and how sustainability links to livelihood, equity and governance among selected island communities. The influences of these concepts on the occupations in farming, fishing, mining, forestry and national policy. Health and Nutrition Issues, Land and Water Use Conflict and Food Security. Appropriate development decisions in order to sustain island food systems which continually benefit all citizens.
Assessment:
Coursework 40%
Examination 60% (2-hours.)

AGEX 3002 (AX36A)
COMMUNICATION SKILLS FOR AGRICULTURAL PROFESSIONAL
(3 credits)
Prerequisite:
Syllabus:
Assessment:
Coursework 40%
Examination 60%

AGEX 3003 (AX39A)*
GENDER ISSUES IN AGRICULTURE
(3 credits)
Prerequisite:
Syllabus:
Defining Gender as a social construct. Historical perspectives for Gender in Caribbean Agriculture. Gender roles and gender relations on the farm and in Agricultural Occupations. Gender Analyses. Gender sensitivity in decision-making which pertains to the agricultural industry. Feminist thinking. Masculinities.
Assessment:
Coursework 40%
Examination 60%
(Also offered to students reading relevant Minors and Majors in the Faculty of Social Sciences and the Faculty of Humanities & Education)
AGEX 5001 (AX502)
COMMUNITY ANALYSIS
(4 credits)

Syllabus:

AGEX 5002 (AX503)
EXTENSION PHILOSOPHY AND PRINCIPLES
(4 credits)

Syllabus:
Advanced concepts of philosophy, principles and methods in the extension process. Formal and non-formal approaches in the diffusion of knowledge with special reference to developing countries.

Assessment:
Coursework 25%
Examinations 75%

AGEX 5003 (AX504)
COMMUNICATIONS THEORY AND PRACTICE
(4 credits)

Syllabus:
The communication process. Principles of effective communication. Practicals and laboratory exercises on communication techniques including printed media, radio programmes, the preparation and use of audio-visual material.

Assessment:
Coursework 25%
Examinations 75%

AGEX 5004 (AX505)
CURRENT ISSUES IN AGRICULTURAL AND RURAL DEVELOPMENT
(4 credits)

Syllabus:
A seminar series highlighting topical themes in agricultural and rural development and emphasising approaches and strategies that treat with such development in the Caribbean from an integrated and integral perspective.

Assessment:
Coursework 25%
Examinations 75%

AGEX 5005 (AX506)
FIELD RESEARCH PROJECT
(8 credits)

Syllabus:
A project based on field research data collected and analysed by the candidate, for which a written report is submitted and an oral examination held.

AGEX 5006 (AX507)
MANAGING EXTENSION FOR AGRICULTURAL AND RURAL DEVELOPMENT
(4 credits)

Prerequisite:

Syllabus:
Agricultural and rural development. Organisational design and structure. The process of extension management; planning; organising; control systems. Human resource development; leadership, delegation and motivation; team building and conflict management; performance appraisal; staff training and development.

Assessment:
Coursework 25%
Examination 75%
AGLS 1000 (AL13B)  
STRUCTURE AND FUNCTION OF ANIMALS  
(4 credits)  
Syllabus:  
Brief introduction to comparative anatomy and physiology of livestock including muscle, blood and circulation, respiration, digestion, reproduction and lactation. An introduction to basic entomology; insect anatomy, life cycles, functions, classification. Brief introduction to life cycle and structure of parasites of livestock; production losses incurred due to parasitism, conventional means of controlling parasites.  
Assessment:  
Coursework: 40%  

AGLS 2001 (AL21C)  
PRINCIPLES OF LIVESTOCK PRODUCTION  
(4 credits)  
Prerequisite: AL13B, AG16B  
Syllabus:  
An introduction to the factors affecting animal production in general to show the interrelationship between animal health, nutrition, genetics and breeding, animal housing and the environment and the marketing of social factors, for domestic and non-domestic livestock species. To highlight the importance of physiological states in animal production systems and to understand the concepts used in developing intensive systems of animal production for both domestic and non-domestic species.  
Assessment:  
Coursework: 40%  
Examination: 60%  

AGLS 2002 (AL22B)  
ANIMAL NUTRITION  
(3 credits)  
Prerequisite: AL13B  
Syllabus:  
The animal and its food; the nutrients and their digestion and metabolism; feedstuffs used in animal diets; evaluation of feeds; feeding standards for maintenance, growth, reproduction and lactation; procedures in feed formulation.  
Assessment:  
Coursework: 25%  
Examination: 75%  

AGLS 2003 (AL25A)  
LIVESTOCK GENETICS AND BREEDING  
(3 credits)  
Prerequisite: AP10B  
Syllabus:  
Introduction to animal breeding and its history, animal breeding from the bottom up, population genetics, quantitative inheritance, statistics and their application to quantitative traits, aids to and methods of selection, mating systems for simply-inherited and quantitative traits, use of animal breeding principles in livestock improvement and breeds and breeding in the Caribbean.  
Assessment:  
Coursework: 40%  
Examination: 60%  

AGLS 2004 (AL26A)  
LIVESTOCK PRODUCTS TECHNOLOGY  
(3 credits)  
Syllabus:  
Technology of milk, meat products and eggs; including quality, consumer demand, methods of storage, distribution and processing, preparation and market presentation. Skin preservation, processing and grading. Field visits.  
Assessment:  
Coursework: 40%  
Examination: 60%  

AGLS 3000 (AL33B)  
POULTRY PRODUCTION  
(3 credits)  
Syllabus:  
Structure of the poultry industry in CARICOM countries with emphasis on chickens. Species of poultry of commercial importance. Management practices including physiology, breeds and breeding, health maintenance, nutrition and feeding, housing and waste management, equipment, incubation (including hatchery management) and brooding. The rearing of breeder flocks, layers and broilers. Records, maintenance, handling, processing and marketing of poultry products.  
Assessment:  
Coursework: 25%  
Examination: 75%
AGLS 3002 (AL34A)
BIOTECHNOLOGY FOR LIVESTOCK PRODUCTION
(3 credits)
Prerequisite: AL21C, AGLS 2003 (AL25A) or Equivalent
Syllabus:
Definition and scope of biotechnology, application of relevant biotechnology for improvement of livestock production through improved nutrition, growth, lactation, breeding, genetics and health.
Assessment:
Coursework: 40%
Examination: 60%

AGLS 3003 (AL36A)
RUMINANT PRODUCTION SYSTEMS
(3 credits)
Prerequisite: AL13B and AL21C
Syllabus:
Structure of the ruminant industry in CARICOM, brief physiology of ruminants, management practices including breeds and breeding, feeding, health and disease prevention and control, housing and waste management, record keeping, planning new enterprises and use of new technologies. Systems of production for beef and dairy cattle, water buffalo, sheep and goats.
Assessment:
Coursework: 40%
Examination: 60%

AGLS 3004 (AL37B)
NON-RUMINANT PRODUCTION SYSTEMS
(4 credits)
Prerequisite: AL13B and AL21C
Syllabus:
Structure of the pig, poultry and rabbit industries in the CARICOM region; management practices including physiology, breeds and breeding, feeding, health, housing and waste management, record keeping, technology and planning of an enterprise. Systems of production for pigs, poultry and rabbits.
Assessment:
Coursework: 40%
Examination: 60%

AGLS 3005 (AL38B)
PRINCIPLES OF WILDLIFE MANAGEMENT AND PRODUCTION
(3 credits)
Syllabus:
Description and importance of wildlife. An introduction to Wildlife Management with particular reference to the neo-tropics. Approaches to Wildlife Conservation. To understand the concepts used in developing intensive systems of animal production for both domestic and non-domestic species. The description of intensive production models of the important neo-tropical species of wildlife.
Assessment:
Coursework: 40%
Examination: 60%

AGLS 3006 (AL39A)
CURRENT ISSUES IN ANIMAL SCIENCES
(3 credits)
Syllabus:
It involves directed study on any topic of interest to the students, may include library and laboratory learning experiences not otherwise available to undergraduate students.
Assessment:
Written Report of Study: 60%
Oral Presentation/Defence: 40%

AGLS 3013 (AL313)
RESEARCH PROJECT (Livestock)
(4 credits)

AGRI 1000 (AG133)
PRACTICAL SKILLS - SUMMER
(3 credits)
Syllabus:
Practical tropical crop and animal husbandry and farm machinery and equipment handling and usage. Activities include field trips to observe modern and appropriate agriculture technologies.
Assessment:
Report on activities undertaken and one test.
Grading is pass or fail.
Request for exemption from Practical Skills must be submitted before the end of Semester I to the Dean’s Office.
AGRI 1001 (AG13B)  
MICROBIOLOGY I  
(2 credits)  

**Syllabus:**  
Microbiology as a fundamental study of bacteria, fungi and viruses, structure and growth of microorganisms, genetic recombination in bacteria and microbial control.  

**Assessment:**  
Coursework: 40%  
Examination: 60%  

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AGRI 1002 (AG13C)  
MICROBIOLOGY II  
(2 credits)  

**Syllabus:**  
A study of microbiological application in respect to food preservation, principles of the Hazard Analysis and Critical Food Point System (HACCP), ecology of microorganisms, and the role of microorganisms in agriculture, technology and diseases.  

**Assessment:**  
Coursework: 40%  
Examination: 60%  

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AGRI 1003 (AG14C)  
MATHEMATICS FOR SCIENTISTS  
(3 credits)  

**Syllabus:**  

**Assessment:**  
Coursework: 40%  
Examination: 60%  

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AGRI 1004 (AG15B)  
THE ECONOMIC & SOCIAL ENVIRONMENT  
(5 credits)  
(The Department of Agricultural Economics and Extension)  

**Syllabus:**  
The nature and scope of economic and social forces in agriculture. Introduction to basic principles of rural sociology. An examination of the structure, function and changes in the Caribbean rural societies. The interaction between socio-economic factors, agricultural systems and agricultural development in the Caribbean. Supply and demand characteristics of the agriculture sector, price determination in a competitive market model, basic principles of production and consumption. The economy as a whole. Money, banking and foreign trade.  

**Assessment:**  
Coursework: 20%  
Examination: 80%  

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AGRI 1005 (AG16B)  
INTRODUCTION TO AGRICULTURE  
(4 credits)  

**Syllabus:**  
This course defines agriculture, traces its historical development and describes its importance to the economy, with special emphasis on the tropics and the Caribbean. The relationship between agriculture and food supply is considered. Special attention is paid to the physical and technical aspects of agriculture and the relationships between the crop, livestock, agro processing, marketing and distribution sub-sectors.  

**Assessment:**  
Coursework: 40%  
Examination: 60%  

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AGRI 1010 (AG18A)  
INTRODUCTION TO CROP AND LIVESTOCK PRODUCTION  
(4 credits)  

**Syllabus:**  
Introduction to fundamental concepts of crop and livestock production. Provides an overview of crop production and deals with the major species of livestock in the CARICOM region, along with the factors that affect their productivity and profitability.  

**Assessment:**  
Coursework: 20%  
Examination: 80%.  

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AGRI 2000 (AG233)
INTERNSHIP - SUMMER
(3 credits)

**Syllabus:**
Hands-on experience in agricultural activities on accredited commercial, semi-commercial, research or marketing institutions in any Caribbean country.

**Assessment:**
Coursework: 100%

*Host Evaluation:* 35%
*Student Report:* 50%
*Co-ordinator Evaluation:* 15%

AGRI 2001 (AG21C)
TROPICAL CROP PROTECTION
(3 credits)

**Prerequisite:** AL13B and AG13B

**Syllabus:**

**Assessment:**
In-course test: 40%
Final examination: 60%

AGRI 2002 (AG22C)
POSTPRODUCTION TECHNOLOGY
(3 credits)

**Prerequisite:** AG16B and AP10B

**Syllabus:**
Technology for agricultural products quality measurement and enhancement during processing and marketing: commodity and co-product processing into value added materials and specialty products. Increasing marketability and value of commodities by ensuring value-added products retain sensory quality, nutritional value and are free from safety hazards. Recovery and utilisation of processing waste.

**Assessment:**
In-course tests: 30%
Examination: 70%

AGRI 2000 (AG35B)
STATISTICAL METHODS
(4 credits)

**Prerequisite:** AG14C

**Syllabus:**
Basic descriptive Statistics, basic concepts and terms in inferential statistics. Binomial and Normal Distributions. Inference about a single population mean and the difference between two populations mean. Analysis of categorical data: assessing independence of factors and Goodness of Fit Test. Design of experiments and analysis of variance, correlation and simple linear regression.

**Assessment:**
Coursework: 40%
Examination: 60%

AGRI 3001 (AG39A)
CLIMATE CHANGE IMPACT & MANAGEMENT
(4 credits)

**Prerequisites:** BL11G or AG16B

**Syllabus:**

**Assessment:**
In-course assessment 40%
One 2-hour theory examination 60%

AGRI 3000 (AG313)
RESEARCH PROJECT
(4 credits)
AGSL 1000 (AS16B)
SOILS AND THE ENVIRONMENT
(4 credits)

Syllabus:
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%
Examination: 75%

AGSL 2000 (AS22B)
SOIL FERTILITY AND FERTILIZER TECHNOLOGY
(3 credits)

Prerequisite: AS16B

Syllabus:
Principles of soil fertility and plant nutrition; Essential elements for plant growth; Nutrient cycles and nutrient dynamics in soils – macro and trace elements; Soil pH management; Essentials of fertilizers – manufactured and natural; Soil fertility evaluation; Fundamentals of nutrient and fertilizer management; Isotopic techniques in fertilizer optimisation; Environmental concerns with fertilizer use.

Assessment:
Coursework: 40%
Examination: 60%

AGSL 2001 (AS21D)
SOIL AND WATER MANAGEMENT
(3 credits)

Prerequisite: AS16B

Syllabus:
Methods of land clearing and their effects on soil structure; soil tillage and the management of soil structure for plant growth; management of soil structure to improve water intake, transmission and storage; water management for salinity control; soil erosion and the management of hillsides; management of dry and wet lands; management of forest soils; management of specific problem soils: soil management and its effects on microbes, microbial activity and soil fertility; soil fertility management; case studies.

Assessment:
Coursework: 25%
Examination: 75%

AGSL 3000 (AS30B)
WATER RESOURCE MANAGEMENT AND PROTECTION
(3 credits)

Prerequisite: AS16B

Syllabus:
Sources of water and their use by man; elementary hydrology; water storage methods; constructing small storage facilities; controlling water runoff; harnessing and conveying water; water losses during water storage and use; methods of reducing water losses; consumptive use of water by crops; estimating and measuring crop water requirements for optimum crop growth; irrigation scheduling; protecting the water resources against pollution and salinisation; legal aspects of water management and use.

Assessment:
Coursework: 25%
Examination: 75%
AGSL 3001 (AS31A)
IRRIGATION AND DRAINAGE TECHNOLOGY
(3 credits)
Prerequisite: AS16B
Syllabus:
Soil water potential and measurements; saturated/unsaturated water movement; water movement to roots; evaporation, evapotranspiration and consumptive use. Sources of water; methods of water application; design, installation, operation and evaluation of irrigation systems; pumps and pumping for irrigation and drainage; drainage principles; types of drains; planning, design and installation of drainage systems; legal and administrative aspects of irrigation and drainage.
Assessment:
Coursework: 25%
Examination: 75%

AGSL 3002 (AS33D)
SOIL SURVEY AND LAND EVALUATION
(4 credits)
Prerequisite: AS16B
Syllabus:
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:
In-course assessment: 40%
Examination: 60%

AGSL 3004 [AS34D]
INTEGRATED WATERSHED MANAGEMENT (4 credits)
Prerequisite: AS16B
Syllabus:
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%

AGSL 3013 [AS313]
RESEARCH PROJECT (SOILS)
(4 Credits)

BIOL 1061 (BL11D)
CELL BIOLOGY AND GENETICS
(6 credits)
Prerequisites: A-level pass in Biology, Botany or Zoology or equivalent
Syllabus:
A study of the ultra structure of the cell, biochemistry of bio molecules and inheritance. Topics include structure and function of bio molecules and cell organelles, enzyme activity, bioenergetics, respiration, the mechanisms of inheritance, gene mapping and genetic variation.
Assessment:
In-course assessment: 20%
One 3-hr practical: 20%
One 3-hr theory examination: 60%
BIOL 1063 (AP10B)
CELL BIOCHEMISTRY & GENETICS
(4 credits)
Prerequisites: Passes in 2 A-level subjects or equivalent which should normally include Biology
Syllabus:
An introduction to cell metabolism and genetics and evolution including (a) ultra structure of plant and animal cells; chemistry and metabolism of carbohydrates, lipids, proteins, nucleic acids and vitamins; energetics and kinetics of biochemical reactions; and (b) the physical and chemical basis of inheritance, polyploidy, mutation and extra-chromosomal inheritance; natural selection; speciation and evolution.
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 1065 (BL12A)
DIVERSITY OF PLANTS AND ANIMALS
(4 credit)
Prerequisites: Passes in 2 A-level subjects or equivalent which should normally include Biology
Syllabus:
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:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 1063 (AP10C)
CELL BIOCHEMISTRY
(2 credits)
(Department of Life Sciences)
Syllabus:
An introduction to cell metabolism, genetics and evolution including ultra structure of plant and animals cells; chemistry and metabolism of carbohydrates, lipids, proteins, nucleic acids and vitamins; energetics and kinetics of biochemical reactions.
Assessment:
Coursework: 30%
Examination: 70%

BIOL 1462 (BL11G)
GENERAL ECOLOGY AND BIOMETRY
[6 credits]
Prerequisites: A-level Biology, Botany or Zoology or Permission of Dean
Syllabus:
An introductory treatment of ecology and data analysis. Topics include population ecology, community ecology, ecosystem ecology, a survey of terrestrial and aquatic ecosystems, descriptive statistics, inferential statistics, independence and probability, simple linear regression and correlation.
Assessment:
In-course assessment 40%
One 3-hr theory examination 60%

BIOL 1762 (AP10E)
PLANT PHYSIOLOGY
(2 credits)
Syllabus:
Water relations of cells and whole plants; photosynthesis, translocation, assimilate partitioning and plant productivity; ion uptake and mineral nutrition; germination, dormancy and seedling establishment; regulation of growth and development by hormonal and environmental factors; introduction to plant growth analysis.
Assessment:
Coursework (1 in-course test) 10%
Practicals – 10%
One 2-hour examination 80%.
BIOL 1764 (BL11F)
DIVERSITY OF GREEN PLANTS
[6 credits]

Prerequisites: A-level pass in Biology or Botany or equivalent

Syllabus:
An introduction to the evolution, taxonomy, and diversity of green plants, from simple algae to complex flowering plants. Topics include factors governing plant size and structure, origin of land plants, organismal theory of plant form. Life cycles of the green and brown algae, mosses, lycophytes, ferns, cycads, gymnosperms, and flowering plants. Requirements for life on land. Success of ferns and flowering plants. Support, vascular, and protective tissues. Leaf, stem and root and their modifications. Meristems, phyllotaxy, and plant architecture. Grasses. Wood anatomy. Flower, fruit, and seed. Pollination and seed dispersal.

Assessment:
Two in-course theory tests 10%
Lab Reports 10%
Two practical tests 20%
One 3-hour theory examination 60%

BIOL 1766 (AP13B)
STRUCTURE AND FUNCTION OF PLANTS
(4 credits)

Syllabus:

Assessment:
Lab reports 10%
In-course theory tests 20%
In-course practical test 10%
One 2-hour theory examination 60%

BIOL 1861 (BL11E)
ANIMAL DIVERSITY
(6 credits)

Prerequisites: A-level Biology, A-level Zoology or equivalent

Syllabus:
A survey of the phylogeny and characteristics of major invertebrate and vertebrate animal groups. Special topics include theories of origin of multicellularity; cellular and tissue level organisation; diploblastic and triploblastic conditions; body cavities; metameric segmentation and tagmatisation; early embryonic development; colonisation of land and evolutionary trends in vertebrates.

Assessment:
In-course assessment 40%
One 3-hour theory examination 60%

BIOL 2062 (Z23B)
FRESHWATER BIOLOGY
(4 credits)

Prerequisites: BL11G or (AG13A & AG14A)

Syllabus:

Assessment:
In-course assessment 40%
One 2-hour theory examination 60%
BIOL 2063 (Z23C)
MARINE ECOLOGY
(4 credits)
Prerequisites: BL11G or (AG13A & AG14A)
Syllabus:
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 bentic communities.; Coral reef biology; biology of marine mammals
Practicals include time at sea.
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2162 (BL27B)
ADVANCED GENETICS
(4 credits)
Prerequisites: BL11D or AP10A/ AP10B
Syllabus:
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:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2261 (BL28C)
BIOLOGY OF MICRO-ORGANISMS
(4 credits)
Prerequisites: BL11D or AP10A / AP10B
Syllabus:
Biology of bacteria, fungi and viruses. Topics include taxonomy, structure, nutrition, reproduction and management of prokaryotes, viruses and fungi; importance of microbes and fungi to man and the environment.
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2361 (BC22A)
BIOMOLECULES AND ENERGY METABOLISM
(4 credit)
Prerequisites: BL11D
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2362 (BC22B)
FURTHER METABOLISM AND GENE EXPRESSION
(4 credit)
Prerequisites: BL11D and C11CCo-requisite: BC 23A
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2363 (BC23A)
METABOLISM
(4 credits)
Prerequisites: BL11D and C11C
Syllabus:
Pathways and control mechanisms for the metabolism of lipids, amino acids and nitrogen. Carbohydrate biosynthesis and photosynthesis. Outline of the basic concepts regarding contractile systems and mechanisms of hormone action. Introduction to the structure and function of immunoglobulins.
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%
BIOL 2364 (BC23B)
ADVANCED GENERAL BIOCHEMISTRY
(4 credits)
Prerequisites: BL11D and C11C
Co-requisite: BC 22A and BC23A
Syllabus:
Relationships between protein structure and function. Mechanism of action of specific enzymes or classes of enzymes e.g. serine proteases, thiol proteases, lysozyme, aldolase, transaminases, oxidoreductases. Membrane structure and transport processes. Metabolic regulation in mammalian energy metabolism.
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2461 (Z24B)
HUMANS & THE ENVIRONMENT
(4 credits)
Prerequisites: BL11G or (AG13A & AG14A)
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2462 (Z24A)
CARIBBEAN ISLAND ECOLOGY
(4 credits)
Prerequisites: BL11G or (AG13A & AG14A)
Syllabus:
Geological and geographical history of island formation, island palaeoecology, modern island environments with particular reference to the West Indies. Island biotic community development and composition – speciation, adaptive radiation, extinction and factors affecting biotic composition. The ecology of Caribbean and other islands. Case histories of the ecology of selected islands and archipelagos. Island ecology in continental settings and ecosystem fragmentation. Human impacts on Caribbean island ecosystems and the future of the ecosystems and biota.
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2761 (BT27A)
PLANT PHYSIOLOGY
(4 credits)
Prerequisites: BL11D and BL11F
Syllabus:
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% compromising
Two in-course theory tests 20%
Lab Reports 10%
One Assignment 5%
One in-course practical test 5%
Final Examination: (one 2-hour theory paper)
BIOL 2861 (Z21E)
FUNCTIONAL DESIGN IN ANIMALS
(4 credits)
Prerequisite: BL11E or AL11B or AL13B
Syllabus:
Adaptation and design in animals. A detailed treatment will be given at the gross anatomical as well as fine structure levels of adaptive structures and features used by animals to perform the functions of protection, support, locomotion, feeding, gas exchange, internal transport, waste elimination and reproduction.
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2862 (Z21F)
ANIMAL PHYSIOLOGY
(4 credits)
Prerequisite: BL11E or AL11B or AL13B
Syllabus:
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:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2864 (Z22C)
PARASITISM
(4 credits)
Prerequisite: BL11E or AL11B or AL13B
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 2866 (Z22B)
ENTOMOLOGY
(4 credits)
Prerequisite: BL11E or AL11B or AL13B
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3061 (BL38C)
MOLECULAR BIOLOGY
(4 credits)
Prerequisites: BL27B or BC22B
Syllabus:
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:
In-course assessment 40%
One 2-hour theory examination 60%
BIOL 3062 (Z36B)
CONSERVATION BIOLOGY
(4 credits)
Prerequisite: BL11G or Equivalent
(Students are also advised to do BL11D or AP10B)
Syllabus:
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:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3068 (BL33C)
FIELD COURSE IN NEOTROPICAL ECOLOGY
(4 credits)
Prerequisites:
BL11G and 16 credits of level-2 Life Sciences courses, or permission of the department
Syllabus:
Introduction to focal group, ecological principles illustrated by focal group, specialized features of focal group, class research projects.
Assessment:
Field book 50%
Group oral report 10%
Group written report 40%

BIOL 3069 (BL33B)
RESEARCH PROJECT
(4 credits)
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.
Syllabus:
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 biological and a written report thereon.
Assessment:
In-course assessment 40%
Project Report 60%

BIOL 3262 (BL38J)
MICROBIAL BIOTECHNOLOGY
(formerly Applied Microbiology)
(4 credits)
Prerequisites: BL28C or AG13A or (BC23A & BC22B) or AG13B
Syllabus:
Advanced treatment of applications of microbiology including microbial ecology and symbiotic relationships; pathogenesis in plants / animals; principles of immunology; food spoilage and processing; single cell protein production, sewage treatment; microbial leaching and genetic engineering. Other special topics dealt with are photosynthesis – anaplerotic and respiratory systems in bacteria; use of radioisotopes in microbiology; Strictland reactions; amino acid production, industrial – and organic acid fermentation.
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%
BIOL 3361 (BC33A)
APPLIED BIOCHEMISTRY
(4 credits)
Prerequisites: BC23B
Syllabus:
Biochemical toxicology, including the absorption, metabolism and effects of toxins on mammalian cell metabolism. Human nutrition with particular reference to developing regions. Basic virology. Laboratory techniques in cell culture and immunochemistry.
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3362 (BC38B)
SELECTED TOPICS
(4 credits)
Prerequisites: BC22A and BC23B
Syllabus:
The areas of study may vary slightly from year to year but will usually include:- Modern concepts of immunology. Regulation of the biosynthesis of amino acids. Biochemistry of selected tissues (eye, muscle, kidney, adipose tissue). Neurochemistry, biological oxidations and mechanisms of signal transduction.
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3364 (BC37B)
CLINICAL BIOCHEMISTRY - I
(4 credits)
Prerequisites: BC 23A
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3461 (Z31A)
COASTAL ECOSYSTEM MANAGEMENT
(4 credits)
Prerequisite: Z23A or Z23C
Syllabus:
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:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3463 (BL39B)
POLLUTION & ENVIRONMENTAL MANAGEMENT
(4 credits)
Prerequisites: Z24B
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%
BIOL 3464 (BT37E)
TROPICAL FOREST ECOLOGY AND MANAGEMENT
(4 credits)
Prerequisites: BL12A & BL11H or BL11G
Syllabus:
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:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3761 (BT31C)
FUNCTIONAL DESIGN IN PLANTS
(4 credits)
Prerequisites: BL11D and BL11F
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3662 (BL36B)
EVOLUTION AND BIOSYSTEMATICS
(4 credits)
Prerequisites: BL11D or AP10A /AP10B
Syllabus:
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:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3762 (BT36D)
PLANT BIOTECHNOLOGY
(4 credits)
Prerequisites: BL27B or (BC22B & BC23A)
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%
BIOL 3763 (BT38L)
CROP IMPROVEMENT
(formerly Plant Breeding)
(4 credits)

Prerequisites: BL27B or AC24A

Syllabus:

Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3764 (BT38E)
ECONOMIC BOTANY
(4 credits)

Co-requisites: BL36B

Syllabus:
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:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3765 (BT38G)
PLANT PATHOLOGY
(4 credits)

Prerequisites: BL28C or AG13A or AG13B

Syllabus:

Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3766 (BT38J)
PLANT ECOPHYSIOLOGY
(not offered in 2004/2005)
(4 credits)

Prerequisites: (BL11G & BT27A) or (AG13A & AP12B)

Syllabus:
Interactions between plants and their environment in various ecosystems – deserts, rain forest, swamps and savannas. The nature of plant injuries and resistance mechanisms to biotic and abiotic stress factors. Plant adaptations that favour survival and growth in specific environments and the balance of water, mineral nutrients, energy and carbon in various plant communities. Environmental influences on plant life cycles and productivity and the relevance of this information in ecosystem management.

Assessment:
Coursework: 40%
Field/Lab Reports 10%
Two (2) In-course tests 20%
One (1) Poster Presentation 5%
Group/Online Participation 5%
Final Examination: 60%
BIOL 3861 (Z33E)
ANIMAL BEHAVIOUR
(4 credits)
Prerequisite:  Z21E or Z21F
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3863 (Z34E)
TROPICAL AQUACULTURE
(4 credits)
Prerequisite:  BL11E or AL11B/AL13B
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3864 (Z34D)
FISHERIES BIOLOGY & MANAGEMENT
(4 credits)
Prerequisite:  Z23C
Syllabus:
Assessment:
In-course assessment 40%
One 2-hour theory examination 60%

BIOL 3865 (BL39A)
ANIMAL BIOTECHNOLOGY
(4 credits)
Prerequisites:  (AP10B or BL11D) and AL23B or BL27B or (BC22B and BC23A)
Syllabus:
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:
In-course assessment 40%
One 2-hour theory examination 60%

CHEM 0060 (C06E)
PRELIMINARY CHEMISTRY I
(0 credits)
Syllabus:
Examination:
One 3-hour written paper
75% Coursework – Practical & Theory 25%

CHEM 0061 (C06F)
PRELIMINARY CHEMISTRY II
(0 credits)
Syllabus:
Assessment:
One 3-hour written paper 75%
Coursework – Practical & Theory 25%
CHEM 1060 (C11C)
INTRODUCTORY CHEMISTRY I
(6 credits)
Prerequisites: CHEM 0060 (C06E) & CHEM 0061 (C06F) or A-level Chemistry or their equivalent.
Syllabus:
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: Fifty-two (52) hours of practical work.
Assessment:
One 3-hour written paper 75%
Coursework – Practical & Theory 25%

CHEM 1061 (C11D)
INTRODUCTORY CHEMISTRY II
(6 credits)
Prerequisites: CHEM 0060 (C06E) & CHEM 0061 (C06F) or A-level Chemistry or their equivalent.
Syllabus:
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: Fifty-two (52) hours of practical work.
Assessment:
One 3-hour written paper 75%
Coursework – Practical & Theory 25%

CHEM 2025 (C20E)
KINETICS AND MECHANISM
(4 credits)
Prerequisites: CHEM 1060 (C11C) and CHEM 1061 (C11D)
Syllabus:
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-six (36) hours of practical work.
Assessment:
One 2-hour written paper 85%
Coursework – Practical & Theory 15%

CHEM 2015 (C20D)
SPECTROSCOPY
(4 credits)
Prerequisites: and CHEM 1061 (C11D)
Syllabus:
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-six (36) hours of practical work.
Assessment:
One 2-hour written paper 85%
Coursework – Practical & Theory 15%

CHEM 2160 (C20A)
MAIN GROUP CHEMISTRY
(4 credits)
Prerequisites: CHEM 1060 (C11C) and CHEM 1061 (C11D)
Syllabus:
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-six (36) hours of practical work.
Assessment:
One 2-hour written paper 85%
Coursework – Practical & Theory 15%

CHEM 2260 (C20B)
BASIC ORGANIC CHEMISTRY I
(4 credits)
Prerequisite: CHEM 1060 (C11C)
Syllabus:
Aromatic chemistry, carbon-carbon bond formation, principles of organic synthesis, principles of stereochemistry. Practical: Thirty-six (36) hours of practical work.
Assessment:
One 2-hour written paper 75%
Coursework – Practical & Theory 25%
CHEM 2360 (C20C)
BASIC PHYSICAL CHEMISTRY
(4 credits)
Prerequisite: CHEM 1061 (C11D)
Syllabus:
Nuclear chemistry. The behaviour of gases, liquids and solids; principles of surface and colloid chemistry; principles of electrochemistry. Practical: Thirty-six (36) hours of practical work.
Assessment:
One 2-hour written paper 85%
Coursework – Practical & Theory 15%

CHEM 2460 (C20F)
PRINCIPLES OF CHEMICAL ANALYSIS
(4 credits)
Prerequisites: CHEM 1060 (C11C) and CHEM 1061 (C11D)
Syllabus:
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 quantitation; 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-six (36) hours of practical work.
Assessment:
One 2-hour written paper 85%
Coursework – Practical & Theory 15%

CHEM 2361 (C31A)
ADVANCED TOPICS IN INORGANIC CHEMISTRY
(4 credits)
Prerequisite: CHEM 2160 (C20A)
Syllabus:
The chemistry of the 4d and 5d transition metals including metal cluster formation, homogeneous catalysis, bio-inorganic complexes. Inorganic polymers, oxide superconductors, heterocyclic rings and cages; heavy metals in the biosphere, other special topics in inorganic chemistry. Practical: Thirty-six (36) hours of practical work.
Assessment:
One 2-hour written paper 85%
Coursework – Practical & Theory 15%

CHEM 3260 (C30B)
BASIC ORGANIC CHEMISTRY II
(4 credits)
Prerequisite: CHEM 2260 (C20B) or repeating CHEM 2260 (C20B)
Syllabus:
Assessment:
One 2-hour written paper 75%
Coursework – Practical & Theory 25%

CHEM 3261 (C31B)
CHEMISTRY OF NATURAL PRODUCTS
(4 credits)
Prerequisite: CHEM 2260 (C20B)
Syllabus:
Assessment:
One 2-hour written paper 75%
Coursework – Practical & Theory 25%
CHEM 3262 (C32B)
ORGANIC SYNTHESIS
(4 credits)
Prerequisites: CHEM 2260 (C20B) and CHEM 3260 (C30B)
Syllabus:
Assessment:
One 2-hour written paper 75%
Coursework – Practical & Theory 25%

CHEM 3360 (C30C)
THERMODYNAMICS AND STATISTICAL THERMODYNAMICS(4 credits)
Prerequisite: CHEM 2360 (C20C) or repeating CHEM 2360 (C20C)
Syllabus:
Assessment:
One 3-hour written paper 75%
Coursework – Practical & Theory 25%

CHEM 3461 (C31F)
ADVANCED ANALYTICAL CHEMISTRY
(8 credits)
Prerequisite: CHEM 3460 (C30F)
Syllabus:
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. Practical: Each student will be required to carry out a ten (10) week project and present a report (oral and written).
Assessment:
One 3-hour written paper 75%
Coursework – Practical & Theory 25%

CHEM 3560 (C30E)
ENVIRONMENTAL CHEMISTRY
(4 credits)
Prerequisite: At least three of CHEM 2160 (C20A), CHEM 2260 (C20B), CHEM 2360 (C20C), CHEM 2015 (C20D), CHEM 2025 (C20E), CHEM 2460 (C20F) or by permission of the Head of Department
Syllabus:
Introduction to the structure of the environment; the physiochemical 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. Practical: Thirty-six (36) hours of practical work.
Assessment:
One 2-hour written paper 60%
Coursework – Practical & Theory 40%
CHEM 3561 (C30G)
INTRODUCTION TO POLYMER CHEMISTRY
(4 credits)
Prerequisite: CHEM 2015 (C20D) or CHEM 2025 (C20E)
Syllabus:
Macromolecules, molecular weights, characterisation, step polymerisation, chain reaction polymerisation, copolymerisation; polymer morphology, testing and characterisation; flow properties and elasticity; solubility, thermodynamics; polymer technology. Practical: Thirty-six (36) hours of practical work.
Assessment:
One 2-hour written paper 85%
Coursework – Practical & Theory 15%

CHEM 3562 (C31C)
CORROSION SCIENCE
(4 credits)
Prerequisite: CHEM 2360 (C20C)
Syllabus:
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. Practical: Thirty-six (36) hours of practical work.
Assessment:
One 2-hour written paper 85%
Coursework – Practical & Theory 15%

CHEM 3563 (C31G)
INDUSTRIAL CHEMISTRY I
(4 credits)
Prerequisite: CHEM 2160 (C20A), CHEM 2260 (C20B), CHEM 2360 (C20C), CHEM 2015 (C20D), CHEM 2025 (C20E), or permission from the Head of Department
Syllabus:
Assessment:
One 3-hour written paper 60%
Coursework – Practical & Theory 40%

COMP1011 (CS10M)
INTRODUCTION TO INFORMATION TECHNOLOGY
(3 credits)
Pre-requisite: None
Syllabus:
Essential Computing Concepts
Basic hardware – the processor, memory, secondary storage, input devices, output devices. Telecommunications. Networking.
Word Processing
Spreadsheets
Databases
What is a database? Create and enter data in tables. Enter data using forms. Retrieve information from a database using queries. Create and print reports. Presentation software
Create and format a simple presentation.
Examination
Based on course work assignments and/or tests 100%.
COMP 1100 (CS11E)
COMPUTER PROGRAMMING I
(6 credits)
Prerequisite: NONE
Syllabus:
Examination:
One 2-hour written paper 75%
Coursework 25%

COMP 1200 (CS11F)
COMPUTER PROGRAMMING II
(6 credits)
Prerequisite: COMP 1100 (CS11E)
Syllabus:
Examination:
One 2-hour written paper 75%
Coursework 25%

COMP 2000 (CS20A)
DATA STRUCTURES
(4 credits)
Prerequisite: COMP 1100 and COMP 1200 (CS11E and CS11F)
Syllabus:
Examination:
One 2-hour written paper 75%
Coursework 25%

COMP 2100 (CS20E)
DISCRETE MATHEMATICS
FOR COMPUTER SCIENCE
(4 credits)
Prerequisite: MATH 1140 and MATH 1150 (M12A and M12B)
Syllabus:
Examination:
One 2-hour written paper 75%
Coursework 25%
COMP 2200 (CS21E)
COMPUTER ARCHITECTURE
(4 credits)
Prerequisite: COMP 1100 and COMP 1200 (CS11E and CS11F)
Syllabus:
Examination:
One 2-hour written paper 75%
Coursework 25%

COMP 2300 (CS22A)
PROGRAMMING FOR BUSINESS APPLICATIONS
(4 credits)
Prerequisite: COMP 1100 and COMP 1200 (CS11E and CS11F)
Syllabus:
Examination:
One 2-hour written paper 75%
Coursework 25%

COMP 2400 (CS22B)
INFORMATION SYSTEMS
(4 credits)
Prerequisite: COMP 1100 and COMP 1200 (CS11E and CS11F)
Syllabus:
Examination:
One 2-hour written paper 75%
Coursework 25%
COMP 2700 (CS27E)
DATABASE MANAGEMENT SYSTEMS I
(4 credits)
(Prerequisite: COMP 1100 and COMP 1200 (CS11E and CS11F))
Syllabus:
Examination:
One 2-hour written paper 75%
Coursework 25%

COMP 3000 (CS30E)
DESIGN AND ANALYSIS OF ALGORITHMS
(4 credits)
(Prerequisite: COMP 2000 (CS20A))
Syllabus:
Examination:
One 2-hour written paper 75%
Coursework 25%
COMP 3100 (CS31A)
OPERATING SYSTEMS
(4 credits)
Prerequisite: COMP 2200 (CS21E)
Syllabus:
Examination:
One 2-hour written paper
Coursework

COMP 3150 (CS32A)
COMPUTER NETWORKS
(4 credits)
Prerequisite: COMP 3100 (CS31A)
Syllabus:
Examination:
One 2-hour written paper
Coursework

COMP 3250 (CS32F)
SOFTWARE ENGINEERING
(4 credits)
Prerequisite: COMP 2000 (CS20A)
Syllabus:
Examination:
One 2-hour written paper
Coursework
COMP 3300 (CS33E)
PROGRAMMING LANGUAGES I
(4 credits)
Prerequisite: COMP 2000 (CS20A)
Syllabus:
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.
Examination:
One 2 hour written paper 75%
Coursework 25%

COMP 3350 (CS33F)
PROGRAMMING LANGUAGES II
(4 credits)
Prerequisite: COMP 2000 (CS20A)
Syllabus:
This course will focus on two programming paradigms: object-oriented and functional. For the object-oriented paradigm, the programming language Smalltalk (or any other language representative of the paradigm) will be used. For the functional programming paradigm, the programming language Haskell (or any other language representative of this paradigm) will be used.
Examination:
One 2 hour written paper 75%
Coursework 25%

COMP 3400 (CS33B)
ARTIFICIAL INTELLIGENCE
(4 credits)
Prerequisite: COMP 2000 (CS20A)
Syllabus:
Examination:
One 2 hour written paper 75%
Coursework 25%
COMP 3500 (CS34M)  
INTERNET TECHNOLOGIES I  
(4 credits)  

**Prerequisite:** COMP 2500 (CS24E)  
**Syllabus:**  
**Examination:**  
One 2-hour written paper 75%  
Coursework 25%  

COMP 3600 (CS35E)  
THEORY OF COMPUTING II  
(4 credits)  

**Prerequisite:** COMP 2600 (CS25E)  
**Syllabus:**  
**Examination:**  
One 2-hour written paper 75%  
Coursework 25%  

COMP 3550 (CS34N)  
INTERNET TECHNOLOGIES II  
(4 credits)  

**Prerequisite:** COMP 3500 (CS34M)  
**Syllabus:**  
**Examination:**  
One 2-hour written paper 75%  
Coursework 25%  

COMP 3650 (CS36E)  
PROGRAMMING LANGUAGE TRANSLATION  
(Not being taught in 2004/2005)  
(4 credits)  

**Prerequisite:** COMP 2000 (CS20A)  
**Syllabus:**  
**Examination:**  
One 2-hour written paper 75%  
Coursework 25%
COMP 3700 (CS37E)
DATABASE MANAGEMENT SYSTEMS II
(4 credits)
Prerequisite: COMP 2700 (CS27E)
Syllabus:
Database Life cycleTransaction management and concurrency control. Database recovery managementPerformance query optimizationDatabase administration Distributed databaseInternet technologies and Databases. Databases and XMLObject –oriented databases. Database modeling with UML. Data warehousing
One 2hour written paper 75%
Coursework 25%

COMP 3750 (CS37A)
NUMERICAL COMPUTING
(4 credits)
Prerequisite: MATH 1140 and MATH 1150 (M12A and M12B)
Syllabus:
Examination:
One 2hour written paper 75%
Coursework 25%

COMP 3800 (CS38E)
CRYPTOGRAPHY AND SECURITY
(Not being taught in 2004/ 2005)
Prerequisite: COMP 2100 (CS20E)
Syllabus:
Examination:
One 2hour written paper 75%
Coursework 25%

COMP 3900 (CS39A)
SPECIAL TOPICS IN COMPUTER SCIENCE
(4 credits)
Prerequisites: COMP 1100 and COMP 1200 (CS11E, CS11F) and 2 relevant advanced courses
Topics:
Examination:
One 2hour written paper 75%
Coursework 25%

COMP 3990 (CS39E)
PROJECT
(4 credits)
Prerequisite: This course is available only to final year students who are majoring in Computer Science at the discretion of the Head, Department of Mathematics & Computer Science. Approval will depend on the student's performance to date in Computer Science.
Syllabus:
There will be six (6) to eight (8) lectures on the following:
• assessing project feasibility;
• methods of investigation;
• project reporting and presentation;
• project management. Students will be required to do a research project in some topic in Computer Science. This may include design and implementation of an approved piece of software.
Examination:
Project report 80%
Oral presentation 20%

ECON 1005 (EC16A)
INTRODUCTION TO STATISTICS
[3 credits]
Syllabus:
Descriptive Statistics; Probability and Probability distributions, Sampling distributions, Estimation, Hypothesis testing. Simple correlation and regression.
Assessment:
Coursework
Examination
FD11A
CARIBBEAN CIVILISATION
(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, maroonage 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%

FD11B
ACADEMIC WRITING FOR DIFFERENT DISCIPLINES
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.

OPTIONS
Option A
Writing about Literature (Compulsory for Literatures in English Majors)
Critical Reading
Writing the Critical Analysis

Option B
Argument and Report Writing
Report Writing
Logical Argument

Option C
Scientific and Technical Writing
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.* Highly recommended for students in the Faculty of Science & Agriculture.

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.

FD12A
Not offered to FSA Students.
FD13A
LAW, GOVERNANCE, ECONOMY AND SOCIETY (UNIVERSITY FOUNDATION COURSE) (3 credits)
(Faculty of Social Sciences)
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.

FINM 2060 (MS28D)
FINANCIAL MANAGEMENT I [3 credits]
Prerequisites: ACCT 1010, (MS15E, EC14E)
Syllabus:
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%
• Research journal 10%
• Project report (20%)
• Oral presentation (10%)
Final 2-hour Theory paper 60%

GENS 3260 (NS21B)
GENDER AND SCIENCE (4 credits)
This course is an elective for all majors in the Faculty of Science & Agriculture and is offered to students in the Faculty of Social Sciences and Humanities wishing to do a minor in Women Studies.
Prerequisites: Successful completion of 16 Level 1 credits
Syllabus:
A critical analysis of selected major papers published during the period 1980 – present which deal with the following:
• The masculinist nature of Science
• Women in Science
• Language and metaphors in Science
• Critiques of the Scientific Method
• Impact of Science on society; ethical issues; indigenous knowledge; public perception of Science
Teaching Approaches: Two 2-hour sessions for twelve (12) weeks using interactive teaching methods. A research project will be assigned for which a research journal will be kept, and an oral presentation made at the end.
Assessment:
Coursework 40%
• Research journal 10%
• Project report (20%)
• Oral presentation (10%)
Final 2-hour Theory paper 60%
HUEC 500 (AH51A)
ADVANCED FOODSERVICE SYSTEMS MANAGEMENT
Prerequisite: HUEC 2003 (AH23A), HUEC 2004 (AH23B), HUEC 3002 (AH33A), and HUEC 3004 (AH33B) or equivalent
Syllabus:
A comprehensive review of the organisational management and operational aspects of food service including menu-planning and evaluation; procurement, receiving, storage of food and supplies; human resource needs, quantity food production with regard to recipe standardisation, nutrient and quality preservation, portion and quality control, costs, sanitation and safety; equipment requirements and specifications, layout and design; quality assurance and continuous improvement in Foodservice.
Assessment:
Final Examination 100%

HUEC 501 (AH51P)
FOODSERVICE SYSTEMS MANAGEMENT PRACTICUM
Co-requisite: HUEC 500 (AH51A)
Syllabus:
Supervised practice in all aspects of foodservice operation and subsystem at institutions and at the community level; coordination of foodservice subsystems, including menu planning and evaluation, policies and procedures, organisation of available resources and quality assurance; design and layout of physical facilities; utilisation of problem-solving and decision making skills under the supervision of a qualified Dietitian. Application of knowledge and skills, integrating clinical nutrition into the management of foodservice, nutrition goals and nutrition education. Management of human, material, operating and facility resources including procurement, pre-processing, production, food distribution and service; maintenance of equipment and supplied; sanitation and safety.
Assessment:
Assignments 100%

HUEC 502 (AH52B)
ADVANCED CLINICAL NUTRITION
Prerequisite: HUEC 3005 (AH34A), HUEC 3006 (AH34B) or equivalent
Syllabus:
A comprehensive review of the principles of nutritional care process as it relates to specified diseases and needs; the role of drugs in nutritional care, disease of the upper and lower gastrointestinal tract, endocrine and metabolic disorders, energy balance, hepatic and biliary system, disorders of the skin and skeletal system; physiological stress and hyper metabolic conditions; neoplastic diseases, AIDS; cardiovascular, nervous and respiratory systems; nutritional support and counselling techniques.
Assessment:
Final Examination 100%

HUEC 503 (AH52P)
CLINICAL NUTRITION PRACTICUM
Co-requisite: HUEC 502 (AH52B)
Syllabus:
Application of knowledge and skills in the collection, assessment, planning, implementation and evaluation of nutritional care of clients with specified diseases and needs; principles of nutritional care in a clinical setting; nutrient modifications in respect of diagnosis, treatment, prevention of complications in various diseases and disorders. Candidates will be assigned to various primary clinical facilities for clinical experience, participating in Paediatrics, Endocrinology, Cancer/Aids/Gerontology, Nephrology, Surgical/Trauma, and Psychiatry/Substance Abuse rotations under the supervision of a qualified Dietitian.
Assessment:
Clinical Appraisal/Case Reviews 40%
Educational Projects 30%
Clinical Update/Research 30%
HUEC 504 (AH53C)
ADVANCED COMMUNITY NUTRITION
Prerequisite: HUEC 3001 (AH32 A) or equivalent
Syllabus:
Providing nutrition services in primary care; promoting and protecting the health of women, infants and children; promoting the health of adults, older adults; safeguarding the food supply; maintaining nutrition and food service standards in group care; planning and evaluating community nutrition services. Computer-aided Food and Nutrition applications; hands-on learning experience with computer software in food and nutrition surveillance, health analysis, diet/exercise analysis, growth and development in childhood and pregnancy, menu-planning, and food and nutrition planning. Practical experience in preparing nutrition information for delivery through the various media (radio, print, graphics). Project development: the process of developing a project (proposal) is outlined with clearly defined objectives, implementation strategy, costing, time analysis, and evaluation. Individual practice is gained in developing a nutrition-related project, using one of the models presented, for a seminar presentation at the end of the programme.
Assessment:
Final Examination 100%

HUEC 505 (AH53P)
COMMUNITY NUTRITION PRACTICUM
Co-requisite: HUEC 504 (AH53C)
Syllabus:
This course will focus on the following areas as applied to community nutrition and nutrition services available within the community: community organisation and need; nutritional components of the health care system; poverty and nutritional problems of economically disadvantaged groups; health promotion-nutrition guidelines; national food and nutrition programmes and policies; agencies (local, regional, international) dealing with nutrition related issues; delivery of quality nutrition services; and legislative and regulatory processes. Clinical practice in (Ministry of Health) one or more health regions in Trinidad and Tobago is coordinated with the theory presented in HUEC 504. A dietitian/public health nutritionist will coordinate the rotation.
Assessment:
Assignments 100%

HUEC 1001 (AH10C)
FOOD SCIENCE
(5 credits)
Syllabus:
Structure and functional properties are examined with respect to the molecular behaviour of the basic components common to food products. Also discussed is the chemistry of changes occurring during processes, distribution and utilisation. Other topics include principles of Food Preservation by chilling, freezing, irradiation, dehydration, fermentation and thermal processing; food regulations and inspection systems and the relationships between packaging materials, food processing operations and product quality.
Assessment:
Coursework 40%
Final Examination 60%

HUEC 1003 (AH12B)
INTRODUCTION TO NUTRITION
(3 CREDITS)
Syllabus:
Assessment:
Coursework 25%
Final Examination 75%

HUEC 1004 (AH13B)
INTRODUCTION TO FOODS
[3 credits]
Syllabus:
Principles involved in preparation of food of standard quality. Influence of composition and techniques on properties of food products. Standard methods of food preparation with emphasis on quality, nutrient retention and safety. One field trip is scheduled for this course.
Assessment:
Coursework – Practical & Theory 60%
Final Examination 40%
HUEC 2000 (AH20A)
BIOCHEMISTRY
[3 credits]
Prerequisite: BLO5C and A-level Chemistry or equivalent
Syllabus:
Chemistry of biological compounds: Carbohydrates, lipids, amino and proteins, nucleic acids etc., pH and buffers, metabolism of energy yielding compounds (bioenergetics); internal and hormonal regulation of metabolic pathways; molecular genetics and implications for the future of clinical nutrition practice.
Assessment:
Final Examination 75%
Mid-term Examination 25%

HUEC 2001 (AH21A)
BASIC HUMAN ANATOMY AND PHYSIOLOGY
[3 credits]
Prerequisite: A-level Biology or equivalent
Syllabus:
The integration of the sciences of human anatomy, physiology and pathology. Functional anatomy with emphasis on basic principles and physiological activities of the different systems of the human body in health and disease.
Assessment:
Coursework -
3 Quizzes 30%
Final Examination 70%

HUEC 2002 (AH22A)
NUTRITION THROUGHOUT THE LIFE CYCLE
[3 credits]
Prerequisite: HUEC 1003 (AH12B)
Syllabus:
Nutritional requirements for growth and development throughout the life cycle. Analysis of nutrition assessment indicators for each age group. Special consideration to growth standards, maternal weight gain, pregnancy and lactation requirements, eating behaviour of various age and other groups. The physiology of aging as it relates to nutrient adequacy in the mature adult.
Assessment:
Coursework 30%
Final Examination 70%

HUEC 2003 (AH23A)
FOODSERVICE SYSTEMS MANAGEMENT
( Organisation, Management and Operations)
[3 credits]
Prerequisite: HUEC 1004 (AH13B)
Syllabus:
The application of Principles of Management to foodservice operations and human resources. Technical and operational aspects in the design of foodservices; including menu planning and evaluation, purchasing, receiving and storage of food and supplies, financial control, inventory control, food delivery and service, sanitation and safety, quality assurance and continuous quality improvement.
Assessment:
Coursework 25%
Final Examination 75%

HUEC 2004 (AH23B)
FOODSERVICE SYSTEMS MANAGEMENT
( Equipment, Layout and Design)
[3 credits]
Prerequisite:
Syllabus:
Introduction to architectural drawings, symbols and design features; reading and interpreting blue-prints; analysis of layout characteristics; principles of workflow and work simplification; sanitation requirements in layout and design; materials used in construction of facilities and equipment in relation to use and care; environmental elements. Determining equipment requirements and writing specifications; equipment purchasing procedures; utilities and services in relation to selection of equipment; energy control; principles of refrigeration and cooling; operation, use and care of equipment. Approximately three (3) field trips are scheduled for this course.
Assessment:
Coursework 25%
Final Examination 75%
HUEC 2006 (AH24B)
BASIC APPAREL CONSTRUCTION
[3 credits]
Prerequisite:
Syllabus:
This course introduces students to the major aspects of apparel production including pattern making methods, and use of the sewing machine. Course includes apparel production terminology and garment construction techniques. Covers data manipulation, drafting a skirt block and creating a complete pattern.
Assessment:
Coursework 40%
Final Examination 60%

HUEC 2007 (AH24C)
INTRODUCTION TO TEXTILES
[3 credits]
Syllabus:
New course – to be developed
Introduction to the structure and properties of textiles. Consumer use and fabric characteristics are emphasised.
Assessment:

HUEC 2008 (AH24D)
PSYCHOLOGICAL ASPECTS OF APPAREL
[3 credits]
Syllabus:
New course – to be developed
A study of the theory and research findings pertaining to the social and psychological aspects and appearance in relation to the self, interpersonal, group and societal behaviour.
Assessment:

HUEC 2009 (AH25B)
FAMILY RESOURCE MANAGEMENT
[3 credits]
Prerequisite:
Syllabus:
Assessment:
Coursework 25%
Final Examination 75%

HUEC 2010 (AH26A)
ADVANCED NUTRITION
[3 credits]
Prerequisite: HUEC 1003 (AH12B)
Syllabus:
The integration and contribution of related scientific disciplines to the study of nutrition. The physiological aspects of nutrition: digestion, absorption, transport and exchange in normal and Specialised cells; utilisation of the essential nutrients emphasising regulatory mechanisms at cellular and organ levels; nutrient interrelationships.
Assessment:
Coursework – 3 assignments 30%
Final Examination 70%
HUEC 3000 (AH31B)
FLAT PATTERN DEVELOPMENT
[3 credits]
Prerequisite: HUEC 1003 (AH12B)
Syllabus:
This course introduces basic industrial techniques of pattern making. The principles and procedures governing the development and use of basic slopers, and the use of manual flat pattern methods to develop patterns by varying a master pattern form given or self designed sketches are covered. Emphasis is on the design process culminating in the designing of original apparel by the flat pattern method.
Assessment:
Mid-term Examination 15%
Practicals 25%
Final Examination 60%

HUEC 3001 (AH32A)
COMMUNITY NUTRITION
[3 credits]
Prerequisite: HUEC 2002 (AH22A), HUEC 2010 (AH26A)
Syllabus:
Functions and effectiveness of various community-based nutrition related resources, services and programmes along with government policy and systems that influence them; sociocultural factors affecting nutritional status; evaluation of nutrition education programmes; health promotion; assessment of nutritional status through the identification of major nutrition problems at the local, national and international levels; nutrition surveillance; food and nutrition policy and planning; research.
Assessment:
Coursework 25%
Final Examination 75%

HUEC 3002 (AH33A)
FOODSERVICE SYSTEMS MANAGEMENT
(Quantity Foods)
[3 credits]
Prerequisite: HUEC 1004 (AH13B)
Syllabus:
Standards and methods of quantity food production and management; Experiences and case studies in planning for production, recipe standardisation, use of quantity foodservice equipment, nutrient and quality preservation, portion control, merchandising and service, cost calculations, energy management; quality control.
Assessment:
Coursework 40%
Final Examination 60%

HUEC 3004 (AH33B)
FOOD PRODUCT DEVELOPMENT
[3 credits]
Prerequisite: HUEC 1001 (AH10C)
Syllabus:
Application of food science principles and experimental procedures to problems in foods. Practical investigations, experimental techniques leading to experience in developing a product; organising taste panels for sensory evaluation and acceptance of product; market testing; market research; patents; packaging; labelling; marketing; advertising.
Assessment:
Project 15%
Mid-Term Examination 10%
Final Examination 75%
HUEC 3005 (AH34A)  
**MEDICAL NUTRITION THERAPY I**  
[3 credits]

*Prerequisites:* HUEC 2010 (AH26A), HUEC 2000 (AH20A), HUEC 2001 (AH21A), HUEC 2002 (AH22A)  

*Syllabus:*  
Medical Nutrition Therapy I will address the following: Nutritional care process; drugs and nutritional care; diseases of the digestive system, oral cavity, and stomach; endocrine system and metabolic disorders; disorders of energy balance; hepatic and biliary systems; skeletal system; disorders of the skin.

*Assessment:*  
Coursework – 3 Quizzes 15%  
Project 10%  
Final Examination 75%

HUEC 3006 (AH34B)  
**MEDICAL NUTRITION THERAPY II**  
[3 credits]

*Prerequisite:* HUEC 2010 (AH26A), HUEC 2000 (AH20A), HUEC 2001 (AH21A), HUEC 2002 (AH22A)  

*Syllabus:*  
Medical Nutrition Therapy II will address the following: Physiological stress and hyper metabolic conditions; nutritional support; neoplastic diseases; A.I.D.S.; nervous system including the brain; renal system; blood and cardiovascular system; respiratory system.

*Assessment:*  
Project 10%  
Coursework – 3 Quizzes 15%  
Final Examination 75%

HUEC 3007 (AH35A)  
**LAW AND THE FAMILY**  
[3 credits]

*Prerequisite:*  

*Syllabus:*  
Family law, Consumer laws and the rights of the consumers with respect to the variety of goods and services offered in the society, such as health, clothing, shelter and the use of leisure without infringing the rights of others. Laws applicable to the processing, packaging, labelling and distribution of food, food safety and nutritive value. Laws of major food regulatory agencies.

*Assessment:*  
Coursework 25%  
Final Examination 75%

HUEC 3008 (AH35B)  
**CHILD DEVELOPMENT**  
[3 credits]

*Prerequisite:*  

*Syllabus:*  
Focus on the physical/motor, intellectual, social and psychological personality aspects of the development of children throughout the life cycle; Stages of infancy; childhood, pre-adolescence and adolescence, and the influences of family, school and society. Topics include theories of brain development, general development trends, physical development at pre-adolescence, the growth spurt, sexual maturation, Piaget’s theory of cognitive development, Erickson’s stage theory of personality development, Kohlberg’s theory and implications for education; Self-concept development.

*Assessment:*  
Mid-term Examination 25%  
Final Examination 75%
HUEC 3009 (AH36A)
EQUIPMENT PRINCIPLES
[3 credits]

**Prerequisite:**

**Syllabus:**
Utilisation of water, electricity and gas for doing work and maintaining health, safety and comfort in the home environment. Selection and use of appliances as related to consumer needs, interests and resources.

**Assessment:**
- Final Examination 100%

HUEC 3010 (AH37A)
HOUSING AND THE ENVIRONMENT
[3 credits]

**Prerequisite:**

**Syllabus:**
Physical, cultural, economic, social and personal factors pertinent to the provision and performance of housing. Functionality of residential interiors with respect to ergonomics, lighting, comfort and health. Water and sanitation; safety; siting, land use and planning concerns; transportation.

**Assessment:**
- Mid-semester examination 15%
- Semester Paper 15%
- Final Examination 70%

HUEC 3011 (AH37B)
ADVANCED TEXTILE
[3 credits]

**Prerequisite:** HUEC 2007 Introduction to Textile

**Syllabus:**
Recent advances in the production and performance of fibres, yarns, finishes and dyes for textile products. Laboratory experiences designed to provide a familiarity with the standards, methods and equipment for evaluating textile product performance.

**Assessment:**

HUEC 3012 (AH312)
PROJECT
[4 credits]

**Syllabus:**
A project within a subject area relevant to the student’s degree option.

**Assessment:**
- Project Report 85%
- Oral Presentation 15%

*See Project Booklet for detailed guidelines*

HUEC 3013 (AH37C)
ADVANCED APPAREL DESIGN AND CONSTRUCTION
[3 credits]

**Prerequisite:** AH24B/HUEC 2006 Basic Apparel Construction

**Syllabus:**
Principles of advanced techniques for apparel construction with emphasis on new, difficult to handle fabrics.

**Assessment:**

MATH 0100 (M 08B)
PRE-CALCULUS
[No credits]

**Prerequisite:** CXC Mathematics or equivalent

**Co-requisite:** MATH 0110 (M08C)

**Syllabus:**
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.

**Examination:**
- One 3-hour paper 85%
- Course test 15%
MATH 0110 (M 08C)
CALCULUS AND ANALYTICAL GEOMETRY
[No credits]
Prerequisite: CXC Mathematics or equivalent
Co-prerequisite: MATH 0100 (M08B)
Syllabus:
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. Examination: One 3-hour paper

85% Course Test 15%

MATH 1140 (M 12A)
BASIC INTRODUCTORY MATHEMATICS
(6 credits)
Prerequisites: A-level Mathematics, MATH 0100 and MATH 0110, (M 08B & M 08C) or equivalent
Syllabus:
Examination: One 3-hour written paper
Coursework

75% 25%

MATH 1150 (M 12B)
FUNCTIONS OF REAL VARIABLES
(6 credits)
Prerequisites: A-level Mathematics, MATH 0100 and MATH 0110, (M 08B & M 08C) or equivalent
Syllabus:
Examination:
One 3-hour written paper 75%
Coursework 25%

MATH 1160 (M 15A)
INTRODUCTORY MECHANICS I
(6 credits)
Prerequisite: A-Level Applied Mathematics
Syllabus:
Examination:
One 3-hour written paper 75%
Coursework 25%
MATH 1170 (M 15B)
INTRODUCTORY MECHANICS II
(6 credits)
Prerequisite: A-Level Applied Mathematics
Syllabus:
Examination:
One 3-hour written paper 75%
Coursework 25%

MATH 2100 (M 20A)
ABSTRACT ALGEBRA
(4 credits)
Prerequisite: MATH 1140 (M 12A)
Syllabus:
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.
Examination:
One 3-hour written paper 75%
Coursework 25%

MATH 2110 (M 20B)
LINEAR ALGEBRA
(4 credits)
Prerequisite: MATH 1140 (M 12A)
Syllabus:
Examination:
One 3-hour written paper 75%
Coursework 25%

MATH 2120 (M 21A)
ANALYSIS & MATHEMATICAL METHODS I
(4 credits)
Prerequisites: MATH 1140 and MATH 1150 (M 12A and M 12B)
Syllabus:
Examination:
One 2-hour written paper 70%
Coursework 30%

MATH 2140 (M 25A)
INTRODUCTION TO PROBABILITY
(4 credits)
Prerequisite: MATH 1140 and MATH 1150 (M 12A and M 12B) or Permission of the Head of Department
Syllabus:
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.
Examination:
One 2-hour written paper 60%
Coursework Examination 40%
MATH 2150 (M 25B)
INTRODUCTION TO STATISTICS
(4 credits)
Prerequisite: MATH 2140 (M 25A) or Permission of the Head of Department

Syllabus:
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, Factional Designs).

Examination:
One 2-hour paper 60%
Coursework 40%

MATH 2170 (M 24A)
INTRODUCTION TO COMBINATORICS
(4 credits)
Prerequisite: MATH 1140 (M 12A)

Syllabus:
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.

Examination:
One 2-hour written paper 75%
Coursework Examination 25%

MATH 2160 (M 21B)
ANALYSIS & MATHEMATICAL METHODS II
(4 credits)
Prerequisites: MATH 1140 and MATH 1150 (M 12A and M 12B)

Syllabus:

Examination:
One 2-hour written paper 70%
Coursework 30%

MATH 2180 (M 24B)
INTRODUCTION TO OPTIMISATION
(4 credits)
Prerequisite: MATH 1140 (M 12A)

Syllabus:
Graphs and Digraphs; Ranking; Shortest Path; Communication Networks; Convex sets; Linear programming; Simplex Method; Theory of games.

Examination:
One 2-hour written paper 75%
Coursework Examination 25%
MATH 2190 (M 25C)  
PROBABILITY AND STATISTICS I  
(4 credits)

Prerequisite: MATH 1140 and MATH 1150 (M 12A and M 12B) or Permission of the Head of Department  
Anti-requisite: MATH 2140 and MATH 2150 (M 25A and M 25B)

Syllabus:
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 (M 25C) is a four (4) credit alternative to both MATH 2140 (M 25A) and MATH 2150 (M 25B) and is primarily aimed at non-Mathematics Majors.

Examination:  
One 2-hour paper 60%  
Coursework 40%

MATH 2200 (M 25D)  
PROBABILITY AND STATISTICS II  
(4 credits)

Prerequisite: MATH 1140, MATH 1150 and MATH 2190 (M 12A, M 12B and M 25C) or Permission of the Head of Department  
Anti-requisite: MATH 2140 and MATH 2150 (M 25A and M 25B)

Syllabus:
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 factorisation 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.

Examination:  
One 2-hour paper 60%  
Coursework 40%

MATH 2210 (M 29A)  
MATHEMATICS OF FINANCE  
(4 Credits)

Prerequisite: MATH 1140 and MATH 1150 (M12A and M12B)

Syllabus:
Introduction to actuarial science; measurement of interest; solutions of problems in interest, basic annuities; more general annuities, yield rates, amortisation schedules and sinking funds, bonds and other securities, practical applications.

Examination:  
One 2-hour written paper 70%  
Coursework 30%

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MATH 2220 (M 29B)
INTRODUCTION TO ACTUARIAL MATHEMATICS
(4 Credits)
Prerequisite: MATH 2120, MATH 2140 and MATH 2210 (M 21A, M 25A and M 29A)
Syllabus:
Survival distributions and life tables, utility theory, life insurance, life annuities, commutation functions, net premiums and premium reserves, introduction to multiple life functions.
Examination:
One 2-hour written paper
Coursework

MATH 3110 (M 31A)
MATHEMATICAL STATISTICS - PROBABILITY THEORY
(4 Credits)
Prerequisite: MATH 2120 (M 21A) or permission of the Head of Department
Syllabus:
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.
Examination:
One 2-hour written paper
Coursework

MATH 3240 (M 31S)
REAL ANALYSIS
(4 credits)
Prerequisite: MATH 2120 (M 21A)
Syllabus:
Examination:
One 2-hour written paper
Coursework
MATH 3250 (M 33A)
FLUID DYNAMICS I
(4 credits)
Prerequisite: MATH 2120 and MATH 2160 (M 21A and M 21B)
Syllabus:
Examination:
One 2-hour written paper 60%
Coursework 40%

MATH 3260 (M 33B)
FLUID DYNAMICS II
(4 credits)
Prerequisite:MATH 3250 (M 33A) or Permission of the Head of Department
Syllabus:
Further Two-dimensional Flows; Some Three-dimensional Flows; Viscous Flows
Examination:
One 2-hour written paper 60%
Coursework 40%

MATH 3280 (M 33D)
INTRODUCTION TO
MATHEMATICAL MODELLING I
(4 credits)
Prerequisite: MATH 2120 and MATH 2160 (M 21A or M 21B)
Syllabus:
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.
Examination:
One 2-hour written paper 75%
Coursework 25%

MATH 3290 (M 34A)
COMBINATORICS
(4 credits)
Prerequisite: MATH 2100 or MATH 2110 (M 20A or M 20B)
Syllabus:
Permutations and Combinations; Generating functions; Recurrence Relations; The Principle of Inclusion and Exclusion; Matching polynomials and Rook polynomials; Polya's theory of counting.
Examination:
One 2-hour written paper 75%
Coursework 25%

MATH 3400 (M 34B)
GRAPH THEORY
(4 credits)
Prerequisite: MATH 2100 (M 20A)
Syllabus:
Graphs: Trees, Spanning trees Algorithms for spanning trees, and for tree-coding Planarity, Colouring Network Algorithms: Matchings, Graph polynomials Applications in Operations Research
Examination:
One 2-hour written paper 85%
Coursework 15%

MATH 3410 (M 34C)
COMBINATORICS AND COMPUTING
(4 credits)
Prerequisite: COMP 1100, COMP 1200, MATH 2170 and MATH 2180 (CS11E, CS11F, M 24A and M 24B)
Syllabus:
Examination:
One 2-hour written paper 75%
A project consisting of a computer implementation together with a project report 25%
MATH 3420 (M 34D)
SPECIAL TOPICS IN GRAPH THEORY
(4 credits)
Prerequisite: MATH 2170, MATH 2180 and MATH 3400 (M 24A, M 24B and M 34B)
Syllabus:
The Syllabus: and content at any one time will depend on the research interests of the lecturer. Relevant research material will be made available.
Examination:
One 2-hour written paper 75%
A project accounting for 25%
(a) project report 15%
(b) 1-hour seminar 10%

MATH 3430 (M 34E)
ADVANCED ALGEBRA I - THEORY
(4 credits)
Prerequisite: MATH 2100 and MATH 2110 (M 20A and M 20B)
Syllabus:
Examination:
One 2-hour written paper 85%
Coursework 15%

MATH 3440 (M 34F)
ADVANCED ALGEBRA II - APPLICATIONS
(4 credits)
Prerequisite: MATH 3430 (M 34E)
Syllabus: Straight-edge and Compass constructions; Coding theory; Polynomial and matrix representation; Applied Linear Algebra; Linear transformation; Functions of matrices; The Jordan Canonical form of a matrix; Solution of systems of differential equations; Quadric surfaces.
Examination:
One 2-hour written paper 85%
Coursework 15%

MATH 3450 (M 35A)
STATISTICAL THEORY I
(4 credits)
Prerequisite: MATH 2140 (M 25A)
Syllabus:
Joint and Conditional Distributions; Distribution of Function of Random variables; Moment Generating Function Techniques; Order statistics; Poisson Process; Finite Markov Chains; Introduction to Queuing Theory.
Examination:
One 2-hour written paper 75%
Coursework 25%

MATH 3460 (M 35B)
STATISTICAL THEORY
(4 credits)
Prerequisite: MATH 2140 and MATH 2150 (M 25A and M 25B)
Syllabus:
Methods of finding estimators and their properties Bayesian Inference; Regression Analysis; Time Series Analysis; Testing of Hypotheses; Design of Experiments; Sampling Theory.
Examination:
One 2-hour written paper 60%
Coursework 40%

MATH 3470 (M 35E)
SAMPLING THEORY
(4 credits)
Prerequisite: MATH 2150 (M 25B) or a Good Grade i.e. B+ in ECON 2006 (EC23J)
Syllabus:
Basic ideas concerning the design and uses of sample surveys. Sampling techniques: Simple random sampling (with derivations of basic results), Stratified sampling, Cluster / REDUCE SPACE / 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.
Examination:
One 2-hour written paper 60%
Coursework 40%
(in-course examinations and projects)
MATH 3500 (M 36C)
COMPLEX ANALYSIS
(4 credits)

Prerequisite: MATH 2120 and MATH 216-0 (M 21A and M 21B)

Syllabus:

Examination:
One 2-hour written paper 75%
Coursework 25%

MGMT 2012 (MS21B)
MANAGEMENT INFORMATION SYSTEMS I
[3 credits]

Prerequisite: None

Syllabus:
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%

MGMT 2014 (MS22A)
ORGANISATIONAL BEHAVIOUR
[3 credits]

Prerequisite:

Syllabus:
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 25%
Final Examination 75%
MGMT 3047 (MS32A)
HUMAN RESOURCE MANAGEMENT
[3 credits]
Prerequisite: MGMT 2014 (MS22A)
Syllabus:
This course provides participants with a broad overview of issues pertaining to human resource management with special reference to the Caribbean environment.
Assessment:
Coursework
Final Examination

MKTG 2080 (MS20A)
PRINCIPLES OF MARKETING
[3 credits]
Prerequisites: ECON 1001, ACCT 1010, ACCT 1011 (EC10D, EC16A, MS15E, and MS15F)
Syllabus:
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 - 1 Test 25%
Final Examination 75%

PHYS 0070 (P07A)
PRELIMINARY PHYSICS I
(credits)
Prerequisite: O-level Physics. In exceptional circumstances, depending on academic merit, this prerequisite may be waived.
Syllabus
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-Boltzmann 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:
32 hours of practical coursework
Theory coursework 20%
Practical coursework 20%
One 3-hour theory paper 60%
PHYS 0071 (P07B)
PRELIMINARY PHYSICS II
(credits)

Prerequisite: O-level Physics. In exceptional circumstances, depending on academic merit, this prerequisite may be waived.

Syllabus:
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 (Millikin's experiment, CRC). 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, etc. 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:

32 hours of practical coursework  Theory coursework  20%
Practical coursework  20%
One 3-hour theory paper  60%

PHYS 1110 (P11A)
INTRODUCTORY PHYSICS
(6 credits)

Pre-requisite: A-Level Physics or equivalent OR O-Level Physics or equivalent together with A-Level Mathematics or equivalent.

Syllabus:
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:

A course of experiments designed to illustrate various principles of Physics. Candidates are required to present their practical notebooks for inspection by the examiner

Theory Coursework  20%
Practical Coursework  20%
One 3-hour theory paper  60%
PHYS 1111 (P11B)  
INTRODUCTORY PHYSICS II  
(6 credits)  
**Syllabus:**  
Electricity and Magnetism: Electric Charge; Electric Field; Gauss’ 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 and Electronics: AC currents/voltages; AC in series and parallel LCR circuits; Vector, phasor and complex representation; Q factor; power; Transformers; Digital systems; Logic gates; Truth tables; Combinatorial circuits; Basic Op Amp. 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:**  
A course of experiments designed to illustrate various principles of Physics. Candidates are required to present their practical notebooks for inspection by the examiner.  
Theory Coursework 20%  
Practical Coursework 20%  
One 3-hour theory paper 60%  

PHYS 2280 (P28A)  
MATHEMATICAL METHODS IN PHYSICS  
(4 credits)  
**Prerequisite:** PHYS1110 (P11A), PHYS1111 (P11B) and A-Level Mathematics or equivalent.  
**Syllabus:**  
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:**  
35 hours of practical coursework  
Theory coursework 20%  
Practical coursework 20%  
One 2-hour paper 60%  

PHYS 2281 (P28B)  
MODERN PHYSICS  
(4 credits)  
**Pre-requisite** PHYS1110 (P11A), PHYS1111 (P11B) and A-Level Mathematics or equivalent.  
**Co-requisite:** PHYS2280 (P28A)  
**Syllabus:**  
**Assessment:**  
35 hours practical coursework  
Theory coursework 20%  
Practical coursework 20%  
One 2-hour paper 60%  

PHYS 2282 (P28C)  
CIRCUIT THEORY AND ELECTRONICS  
(4 credits)  
**Pre-requisite:** PHYS1110 (P11A) and PHYS1111 (P11B) OR (MATH 1140 (M12A) and MATH 1150 (M12B) & COMP1100 (CS11E) and COMP1200 (CS11F) or MATH1160 (M15A) and MATH1170 (M15B)  
**Syllabus**  
**Assessment:**  
35 hours practical coursework  
Theory coursework 20%  
Practical coursework 20%  
One 2-hour paper 60%
PHYS 2283 (P28D)
OSCILLATION, WAVES AND OPTICS
(4 credits)

Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B) and A-Level Mathematics or equivalent.
Co-requisite: PHYS2280 (P28A)

Syllabus:
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:
35 Hours of practical coursework.
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%

PHYS 2290 (P29A)
INTRODUCTION TO MEDICAL PHYSICS AND BIOENGINEERING
(4 credits)

Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B) and A-level Mathematics or equivalent.
Co-requisite: PHYS2280 (P28A)

Syllabus:

Assessment:
35 hours of practical coursework.
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%

PHYS 2291 (P29B)
DIGITAL ELECTRONICS
(4 credits)

Pre-requisite: PHYS1110 (P11A) and PHYS1111 (P11B) OR MATH1140 (M12A) and MATH1150 (M12B) & COMP1100 (CS11E) and COMP1200 (CS11F) OR MATH1160 (M15A) and MATH1170 (M15B)

Syllabus:
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:
35 hours of practical coursework
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%

PHYS 2292 (P29C)
METEOROLOGY, CLIMATOLOGY AND POLLUTION
(4 credits)

Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B) and ‘A’ Level Mathematics or equivalent.
Co-requisite: PHYS2280 (P28A)

Syllabus:

Assessment:
35 hours of practical coursework
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%
PHYS 2293 (P29D)
FUNDAMENTAL OF GEOPHYSICS
(4 credits)
Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B) and ‘A’ Level Mathematics or equivalent
Co-requisite: PHYS2280 (P28A)
Syllabus:
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:
35 hours of practical coursework
Theory Coursework 20%
Practical Coursework 20%
One 2-hour paper 60%

PHYS 2294 (P29E)
MATERIALS SCIENCE
(4 credits)
Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B) and ‘A’ Level Mathematics or equivalent.
Co-requisite: PHYS2280 (P28A)
Syllabus:
Assessment:
35 hours of practical coursework
Theory Coursework 20%
Practical Coursework 20%
One 2-hour paper 60%

PHYS 2295 (P29F)
LASERS AND SOLAR ENERGY
(4 credits)
Pre-requisite: PHYS1110 (P11A) and PHYS1111 (P11B)
Co-requisite: PHYS2280 (P28A)
Syllabus:
Assessment:
35 hours of practical coursework.
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%

PHYS 3381 (P38B)
MODERN PHYSICS
(4 credits)
Pre-requisite: PHYS2281 (P28B) or repeating
Co-requisite: PHYS2280 (P28A)
Syllabus:
Assessment:
35 hours of practical coursework.
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%
PHYS 3382 (P38C)
CIRCUIT THEORY, ELECTRONICS & CONTROL THEORY
(4 credits)
Pre-requisite: PHYS2282 (P28C) or repeating
Co-requisite: PHYS2280 (P28A)
Syllabus:
Assessment:
35 hours of practical coursework.
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%

PHYS 3383 (P38D)
OPTICS AND ASTRONOMY
(4 credits)
Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B), M080 or M08B and M08C or “A” Level Maths.
Co-requisite: PHYS2280 (P28A)
Syllabus:
Optics: Fraunhofer and Fresnel diffraction and polarisation. Descriptive and quantitative considerations, applications. Astronomy: Observational instruments; celestial sphere and coordinate systems; solar system; Stars and their evolution; Galaxies and cosmology.
Assessment:
35 hours of practical coursework
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%

PHYS 3384 (P38E)
THERMODYNAMICS AND SOLID STATE PHYSICS
(4 credits)
Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B) and “A” Level Mathematics or equivalent
Co-requisite: HYS2280 (P28A)
Syllabus:
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:
35 hours of practical coursework.
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%

PHYS 3385 (P38F)
ELECTROMAGNETIC THEORY & APPLICATIONS
(4 credits)
Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B) and “A” level Mathematics or equivalent
Co-requisite: PHYS2280 (P28A)
Syllabus:
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.
Assessment:
35 hours of practical coursework
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%
**PHYS 3387 (P38P)**  
**RESEARCH PROJECT**  
**(4 credits)**  
*Available only to Physics Majors who need a maximum of 40 credits to graduate*

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

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

**Dissertation Report**  
40%

**Performance**  
40%

**Oral Presentation**  
20%

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**PHYS 3390 (P39A)**  
**FURTHER MEDICAL PHYSICS AND BIOENGINEERING**  
**(4 credits)**

*Prerequisite: PHYS1110 (P11A) and PHYS1111 (P11B) and “A” level Mathematics or equivalent*

**Syllabus:**  

**Assessment:**  
35 hours practical coursework

**Theory coursework**  
20%

**Practical coursework**  
20%

**One 2-hour theory paper**  
60%

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**PHYS 3391 (P39B)**  
**FURTHER DIGITAL ELECTRONICS AND MICROPROCESSOR SYSTEMS**  
**(4 credits)**

*Pre-requisite: PHYS2291 (P29B) or repeating*

**Syllabus:**  

**Assessment:**  
35 hours of practical coursework

**Theory coursework**  
20%

**Practical coursework**  
20%

**One 2-hour paper**  
60%

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**PHYS 3392 (P39C)**  
**PHYSICAL OCEANOGRAPHY AND GEOHYDROLOGY**  
**(4 credits)**

*Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B) and ‘A’ Level Mathematics  
Co-requisite: PHYS2280 (P28A)*

**Syllabus:**  

**Assessment:**  
35 hours of practical coursework

**Theory coursework**  
20%

**Practical coursework**  
20%

**One 2-hour paper**  
60%
PHYS 3393 (P39D)
EARTH MATERIALS, EARTH PROCESSES AND SEISMOLOGY
(4 credits)

Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B) & and 'A'
Level Mathematics
Co-requisite: PHYS2280 (P28A)

Syllabus:
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:
35 hours of practical coursework
Theory coursework  20%
Practical coursework  20%
One 2-hour paper  60%

PHYS 3394 (P39E)
FURTHER MATERIALS SCIENCE (4 credits)

Pre-requisite: PHYS1110 (P11A), PHYS1111 (P11B) and MATH0100 (M08B) or MATH0110 (M08C) or “A” level Mathematics
Co-requisite: PHYS2280 (P28A)

Syllabus:

Assessment:
35 hours of practical coursework
Theory coursework  20%
Practical coursework  20%
One 2-hour paper  60%

PHYS 3395 (P39F)
THIN FILMS AND VACUUM PHYSICS (4 credits)

Pre-requisite: PHYS2294 (P29E)

Syllabus:

Assessment:
35 hours of practical coursework
Theory coursework  20%
Practical coursework  20%
One 2-hour paper  60%
PHYS 3396 (P39G)
CERAMICS
(4 credits)
Prerequisite: PHYS2294 (P29E) or repeating
Syllabus:
Typical properties and engineering applications; Crystal structures; Processing of Ceramics; Ceramic microstructures; Mechanical, thermal, electrical and magnetic properties; cements and concrete; Ceramic coating.
Assessment:
35 hours practical coursework
Theory coursework 20%
Practical coursework 20%
One 2-hour paper 60%

PSYC 1003 (PS14A)
INTRODUCTION TO PSYCHOLOGY
[3 credits]
Prerequisite: None
Syllabus:
This course deals with basic concepts in psychology. It also seeks to illustrate how these concepts and their related theories can be linked to social, educational and political issues.
Assessment:
Final Examination 100%

PSYC 2011 (PS24D)
SELECTED THEORIES IN SOCIAL PSYCHOLOGY
[3 credits]
Prerequisite: PS14A OR PS11B
Syllabus:
A survey of selected theories in social psychology and the methods used to examine social psychological concepts. Emphasis is on the interactionist dynamics of social psychology examining socialisation, conformity, cognitive dissonance, attitude formation and change, prejudice and race relations, leadership and interpersonal relations.
Assessment:
Final Examination 100%
FACULTY PRIZES

The following is a list of Campus Faculty and Departmental Prizes awarded annually in the Faculty of Science & Agriculture.

FACULTY PRIZES

i. A First Year Faculty prize of books to the value of two hundred and fifty dollars ($250.00) awarded to the Level I student with best academic performance.

ii. A Second Year Faculty prize books to the value of two hundred and fifty dollars ($250.00) awarded to the Level II student with the best academic performance.

iii. A Silver Gilt medal awarded to the Level III (Final) year student with the best academic performance.

SCHOOL OF AGRICULTURE

AGRICULTURAL ECONOMICS & EXTENSION DEPARTMENT

THE HEAD OF DEPARTMENT PRIZE
Awarded for the best performance in Agricultural Economics and Extension: Year I

THE HEAD OF DEPARTMENT PRIZE
Awarded for the best performance in Human Ecology: Year I

THE HEAD OF DEPARTMENT PRIZE
Awarded for the best performance in Human Ecology: Year I

THE HEAD OF DEPARTMENT PRIZE
Awarded for the best performance in Agribusiness Management: Year II

THE HEAD OF DEPARTMENT PRIZE
Awarded for the best performance in Human Ecology: Year II

THE JOE PIRES MEMORIAL PRIZE
(formerly THE CARIBBEAN CHEMICALS & AGENCIES LTD) Awarded for the best performance in Agricultural Extension: Years II & III

PETROTRIN BOOK PRIZE:
Awarded for the best performance in Agribusiness Management over Years II & III
PETROTRIN BOOK PRIZE:
Awarded for the best performance in Agricultural Economics over Years II & III

DR. SUNNEY D. ALEXIS MEMORIAL PRIZE:
Awarded for the best performance in the Human Ecology: Year III

THE CHELSTON W.D. BRATHWAITE PRIZE:
Awarded for the best final year project demonstrating excellence in Project Management: Year III

THE MARKETING & DISTRIBUTION PRIZE:
Awarded for the best performance in Marketing: Year III

THE SCOTIABANK PRIZE:
Awarded for the best performance in Finance and Accounting: Year III

THE AGribusiness Community
SERVICE PRIZE:
Awarded for outstanding service to the Agribusiness Community donated by Agribusiness Alumni: Year III

THE HEAD OF DEPARTMENT PRIZE:
Awarded for the best performance in B.Sc. Human Ecology – General Option: Year III

THE PROFESSOR CHARLES McDAVID PRIZE:
Awarded for the best performance in the Diploma in Institutional And Community Dietetics and Nutrition: Year III

SPECIAL PRIZES

THE T.P. LECKY AWARD
Challenge Trophy donated by the Caribbean Agricultural Research and Development Institute (CARDI). Awarded for the best performance in all the degrees in the School of Agriculture over Years I to III.

CURRIE MEMORIAL PRIZE
For the student who excelled in extra-curricular activities subject to satisfactory academic performance.

MARCHIONESS OF ANGLESEY PRIZE
For the best all-round First Year Student

GARDEN CLUB OF TRINIDAD AND TOBAGO PRIZE
Awarded to the best practical paper on a Horticulturally related topic

DEPARTMENT OF FOOD PRODUCTION PRIZES

THE HEAD OF DEPARTMENT PRIZE
Awarded for the best performance in Agriculture – General: Year I

THE HEAD OF DEPARTMENT PRIZE
Awarded for the best performance in Agriculture – General: Year II

THE J. SIDNEY DASH PRIZE
Awarded for the best performance in Crop Science over: Years II & III

FREDERICK HARDY PRIZE
This prize should be awarded to the Part III student who obtains the highest average marks in courses taken in Soil Science at the Parts II and III examinations including the Project.

THE LE GENDRE & CO. LTD. PRIZE
Awarded for the best performance in Crop Science over: Years II & III

THE P.V.C. B. TEWARIE PRIZE
Awarded for the best performance in Agriculture - General: Years II & III

S. NORMAN GIRVAN AWARD FOR EXCELLENCE
B.Sc. Agriculture (General) degree, School of Agriculture. The student should demonstrate an interest in sugar or sugarcane in his Research Project which may be carried in any Department of the Faculty. Nomination of candidates would be done in consultation with the Head, Department of Agricultural Economics and Extension.

WE. FREEMAN PRIZE
This prize valued at $500.00 cash and a $500.00 trophy is awarded to the best final year project on the Biology of Cocoa and is a joint School of Agriculture/School of Natural Sciences Prize.

SCHOOL OF SCIENCE

LIFE SCIENCES DEPARTMENT

THE METROPOLITAN PRIZE
Awarded for the best First Year Performance in Life Sciences Courses

THE NORVATIS PRIZE
Awarded for the best Final Year Project in the Department of Life Sciences
PLANT SCIENCE

PROFESSOR E.J. DUNCAN PRIZE
Awarded for the best Year I performance in Plant Science by a student continuing in Life Sciences

THE STEEDE MEDICAL CARIBBEAN LTD. PRIZE
Awarded for the best Year II performance in Plant Science

THE REPUBLIC BANK LTD. PRIZE
Awarded for the best Year III performance in Plant Science

BIOCHEMISTRY

THE PI CARIBBEAN LIMITED 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

ZOOLOGY

THE PROFESSOR P.R. BACON PRIZE
Awarded for the best Year I performance in Zoology for a student continuing in Life Sciences

THE SEETERAM BOOK CENTRE PRIZE
Awarded for the best Year II performance in Zoology – Book Voucher Prize

THE LEXICON TRINIDAD LTD. PRIZE
Awarded for the best Year III performance in Zoology for a student continuing in Life Sciences

ENVIRONMENTAL & NATURAL RESOURCE MANAGEMENT

THE ASA WRIGHT NATURE CENTRE-J ULIAN 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

POSTGRADUATE STUDIES

THE ENVIRONMENTAL MANAGEMENT AUTHORITY (EMA) PRIZE
Awarded for the best performance in the MSc in Science for the Management of Tropical Environments

THE EPAS CONSULTANTS PRIZE
Awarded for the best research project in the MSc in Science for the Management of Tropical Environments

CHEMISTRY DEPARTMENT

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 III performance in Chemistry & Management

THE PENTA PAINTS TRINIDAD LTD. PRIZE
Awarded for the best graduating student in Chemistry

THE PERKIN ELMER/EMPIRE SALES & AGENCIES PRIZE
Awarded for the best performance in Analytical Chemistry

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

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 JOHN ALEONG PRIZE IN STATISTICS
Awarded for the best Year III performance in Statistics

COMPUTER SCIENCE

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

THE digi-data systems PRIZE
Awarded for the best Year II performance in Computer Science

COMPUTER SCIENCE AND MANAGEMENT

THE FUJ ITSU-ICL PRIZE
Awarded for the best Year III performance in Computer Science

THE bp TRINIDAD & TOBAGO PRIZE
Awarded for the best Year II performance in Computer Science & Management

PHYSICS DEPARTMENT

THE VICAR ENTERPRISES LTD. PRIZE
Awarded for the best Year I performance

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

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

THE UNIT TRUST CORPORATION PRIZE
Awarded for the best Year III performance

THE ANTHONY CAMPBELL MEMORIAL AWARD
Awarded for the best Year I performance

THE TRINIDAD AGGREGATE PRODUCTS PRIZE
Awarded for the best performance in Ceramics

THE TRINIDAD & TOBAGO TELECOMMUNICATION SERVICES (TSTT) PRIZE
Awarded for the Best Overall student in Electronics

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

THE MAURA IMBERT PRIZE
Awarded for the best Year III performance in Astronomy & Optics

SPECIAL PRIZES

TRINIDAD & TOBAGO SCIENTIFIC ASSOCIATION (TTSA) PRIZE
Awarded to the best All round student in Year II who has performed well academically and who is actively involved in the promotion of Science in the Society

CARIBBEAN ACADEMY OF SCIENCES (CAS) PRIZE
Awarded to the best Year II student of the Faculty

THE COATES BROTHERS CARIBBEAN LTD. PRIZE
Awarded for the best overall performance over the 3-Year Programme

THE FACULTY NOMINEE FOR THE BWA STUDENT OF THE YEAR PRIZE
RULES FOR LIBRARY USERS

HOURS

1. SEMESTER
   Monday to Friday  8:30 a.m. - 10:00 p.m.
   Saturday         8:30 a.m. - 5:00 p.m.

   CHRISTMAS VACATION & SUMMER VACATION
   Monday           8:30 a.m. - 6:30 p.m.
   Tuesday to Friday 8:30 a.m. - 5:00 p.m.
   Saturday         8:30 a.m. - 12:30 p.m.

   Computer Lab “STARRS” & Reading Room

   LONG/SUMMER VACATION
   (subject to available funding)
   Monday to Friday  10:00 p.m. - 6:00 a.m.
   Saturday          5:00 p.m. - 6:00 a.m.
   Sunday            12:00 noon - 6:00 p.m.

   SUMMER SCHOOL
   Monday to Wednesday 8:30 a.m. - 10:00 p.m.
   Thursday to Saturday 8:30 a.m. - 5:00 p.m.

   Vacation hours will apply to the first week of each academic year.
MEMBERSHIP

UWI :-
2. The Library is open to registered graduate and undergraduate students and staff of all campuses of The University of the West Indies.

3. Non-UWI :-
   a. Visiting research workers, faculty and students of other universities and tertiary level institutions may be granted reading and reference privileges on recommendation of a faculty member, and at the discretion of the Librarian.*

   b. Other non-university persons over the age of 16 may be granted reading and reference privileges. This is, however, subject to a review by the Librarian on duty and is dependent on the specific need of the particular person.

   c. A fee may charged for long periods of use or repeated use as outlined in Information Bulletin No. 9 (Rev.).

   d. Users in this category are not allowed loans.

LOANS

General

4. No book, periodical or other library material may be removed from the Library unless it has been legitimately charged out at the Loans Desk and the date label stamped by a member of staff on duty. A user is responsible for any book or other item borrowed in his/her name. This responsibility ends only when the loan is officially cancelled. Failure to comply with this rule will be treated as a major and deliberate offence.

5. Users’ identification cards are not transferable. It is a major offence to lend or borrow identification cards. Persons contravening this rule may have their library privileges withdrawn or may be referred to the Principal for further action.

6. Certain publications may not be removed from the Library. These include all materials from the West Indiana & Special Collections Division as well as reference books, specially marked items from the closed reserve collection and works of special value. All such material will be clearly marked.

7. Loans may extend for varying periods depending on the extent of demand for each item. All material loaned will be subject to recall by the Librarian at any time. No loans may be renewed for more than seven (7) days.

   In cases where a book issued on loan is requested by another user, it may be recalled after it has been on loan for a minimum of seven days. A new date due is assigned and fines are charged for non-return of the item after the new date.

Undergraduates

8. Undergraduate students of the University may have on loan up to six (6) books at a time. They may not borrow serials. Two Reserve items may be borrowed at a time either for use in the Library or on overnight loan. Two additional items from the Reserve Collection may also be borrowed for three (3) or seven (7) days.
THE UNIVERSITY BOOKSHOP

The University Bookshop is your source for essential texts. The shop also stocks stationery items and books of general interest. A select range of insignia items has recently been introduced. These include mugs, T-shirts, caps and stationery.

An order service is available to students who require books not stocked at the Bookshop. Using the most up to date reference tools, prices are determined and a 50% down payment is required to initiate the order process. Other services include film processing, binding of term papers and projects, and photocopying.

In keeping with its objective of providing texts at the lowest cost, as well as satisfying the diverse needs of the University Community, the Shop staff welcomes comments from those it serves.

Situated at the northern end of the Campus, the Shop’s opening hours are as follows:

Monday - Thursday - 8.30 am - 4.00 pm
Friday - 8.30 am - 4.15 pm

The Management and Staff look forward to serving you.