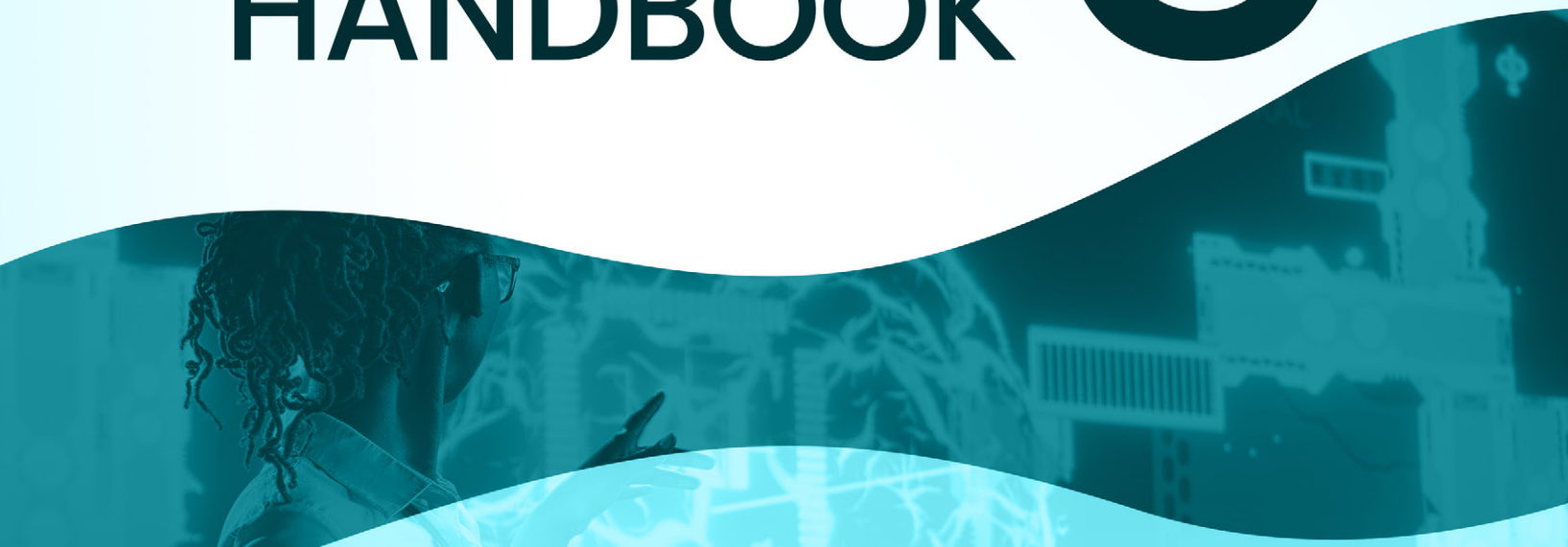
THE UNIVERSITY OF THE WEST INDIES
FIVE ISLANDS CAMPUS

2024/5 STUDENT HANDBOOK



SCHOOL OF SCIENCE, COMPUTING AND ARTIFICIAL INTELLIGENCE

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DIRECTOR OF ACADEMIC AFFAIRS MESSAGE

Dear Students,

Welcome to the School of Science, Computing, and Artificial Intelligence at the University of the West Indies Five Islands Campus! As Dean, it is my great pleasure to welcome you to the 2024/2025 academic year—a year brimming with possibilities, innovation, and the exciting future of artificial intelligence.

Our school is at the forefront of shaping the next generation of innovators, entrepreneurs, and leaders in the field of AI and technology. Whether you are diving into the Interdisciplinary BSc in Data Science, Innovation Management and Computer Science, BSc in Computer Science, BSc in Information Technology, or a Minor in Applied Data Science, you are stepping into a world where your ideas can transform industries, solve global challenges, and create groundbreaking solutions.

We are dedicated to fostering a culture of creativity, exploration, and cutting-edge innovation. Our distinguished faculty are not just educators—they are pioneers in their fields, eager to mentor you as you push the boundaries of what is possible. With access to state-of-the-art facilities and a curriculum designed to ignite your entrepreneurial spirit, you are well-equipped to turn your passion for AI into a remarkable career or venture.

As you embark on this journey, I urge you to seize every opportunity to innovate, collaborate, and challenge yourself. Engage deeply with your professors and peers, immerse yourself in real-world projects, and take advantage of the numerous resources our campus offers. This is your time to experiment, to dream big, and to lay the foundation for an incredible future.

Together, let's make this academic year not just a step forward, but a leap into the future. Welcome once again to the School of Science, Computing, and Artificial Intelligence, where the future of technology and entrepreneurship begins.

We can't wait to see the remarkable achievements and contributions you will make to our dynamic academic community.

Curtis B. Charles, PhD.

Dean/Director of Academic Affairs

MESSAGE FROM THE HEAD OF SCHOOL

Congratulations on being accepted to the University of the West Indies, Five Islands Campus! We are delighted to welcome you to the School of Science, Computing, and Artificial Intelligence (SoSCAI) and look forward to starting this journey with you.

You've made a great choice, as our field is full of opportunities. It is poised to significantly transform our society, presenting us (you and me) with exciting opportunities and significant responsibilities. You have the chance to stand out and achieve greatness. Many exciting developments are happening rapidly, and we encourage you to immerse yourself in this dynamic environment and be transformed by it as you learn and contribute to this evolving field.

Through the SoSCAI curriculum, you will gain a deep understanding of Computing and Data Science, preparing you to work effectively in interdisciplinary settings and develop transformative technologies. At SoSCAI, you will have the chance to participate in practical activities, including regional and international competitions. These events will allow you to tackle interesting problems, explore your ideas, and develop entrepreneurial ventures. We encourage you to take full advantage of these opportunities, and we look forward to seeing the unique products you will create during your time here.

Our faculty and staff are dynamic, inclusive, and ready to share their expertise with you, supporting your academic goals. We expect you to collaborate diligently with your peers, faculty, staff, and university leadership to enhance your skills and push the boundaries of computational sciences.

We wish you all the best for the upcoming school year!

Ilenius Ildephonce, B.Sc., Ph.D.

Head of School

MESSAGE FROM THE GUILD STUDENT REPRESENTATIVE OF SOSCAI

First, I extend a warm welcome to you, the amazing students who have chosen to embark on this new and unfamiliar journey here at THE UWI, Five Islands Campus in Antigua. Welcome, bright minds of the future, and congratulations on being accepted into the School of Science, Computing, and Artificial Intelligence (SoSCAI)! My name is Shemar Abel, your representative, and a fellow student at this amazing school and department.

I cannot promise you that the road ahead will be easy, but I can assure you that the hardest part is behind you. Choosing a path that few have walked before can feel daunting, but it is pioneers like you who make us, your predecessors, proud. At SoSCAI, we are not just a school department but an extended family. Feel free to ask for help when you need it, suggest ways to improve your experience, or simply stop and chat about anything on your mind.

Whether you are coming from high school or another institute of higher education, whether you are local, regional, or international, working, or unemployed, bettering yourself should not be stressful or come at the expense of your mental or physical health. Remember, beyond chasing academic excellence, you must build bonds and have fun. University is not purely about earning a degree but about building competence in your field, developing human and social interactions, solving real-world problems, and managing your time effectively.

I wholeheartedly encourage you to take part in campus activities and get to know the staff, teachers, representatives, departments, and your classmates. Make friends, respect one another, learn, and have fun. Most importantly, never give up on chasing your goals. The path to mediocrity is lined with the allure of laziness and ends with regret, while the path to success is lined with hurdles and ends with strength, character, and satisfaction.

When you feel like giving up, remember that your success could be right after that hurdle, calling your name.

Shemar Abel

Guild Elect Student Representative of SoSCAI

STAFF LIST 2024-2025

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DR LETETIA ADDISON
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Lecturer

ACADEMIC CALENDAR 2024-2025

Graduation Dates
Graduation Ceremony: October 12, 2024

Semester I Dates 2024-2025
Semester Begins: Sunday, August 25th, 2024

Teaching Begins: Monday, September 2nd, 2024

Teaching Ends: Friday, November 22nd, 2024

Review/Study Week: November 24th - December 1st, 2024

Examinations Begin: Monday, December 2nd, 2024

Examinations End: Friday, December 20th, 2024

Semester I Ends: Friday, December 20th, 2024

Semester II Dates 2024-2025
Semester II Begins: Sunday, January 19th, 2025

Teaching Begins: Monday, January 20th, 2025

Teaching Ends: Friday, April 11th, 2025

Review/Study Week: April 13th - April 20th, 2025

Examinations Begin: Tuesday, April 22nd, 2025

Examinations End: Friday, May 9th, 2025

Semester II Ends: Friday, May 9th, 2025

Summer Dates 2024-2025
Summer Semester Begins: Sunday, May 25th, 2025

Teaching Begins: Monday, May 26th, 2025

Teaching Ends: Friday, July 4th, 2025

Review/Study Week: July 7th - July 11th, 2025

Examinations Begin: Monday, July 14th, 2025

Examinations End: Friday, July 25th, 2025

Summer Semester Ends: Friday, July 25th, 2025

GENERAL REGULATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE IN THE SCHOOL OF SCIENCES, COMPUTING AND ARTIFICIAL INTELLIGENCE

DEFINITION OF TERMS

ADVISING HOLD	An Advising Hold may be placed on a student record to indicate that the student must get academic advising prior to registration.
ANTI-REQUISITES	Refers to courses where content overlap precludes courses being taken together for credit. Students are urged to view the listings in this handbook and consult their department for guidance.
CORE OR COMPULSORY COURSES	Courses that students must complete in order to be awarded a degree.
CREDIT	Refers to a unit of study counting towards a degree or diploma. Undergraduate courses in the Faculty normally carry a weighting of three (3) credits. A number of courses, however, carry a weighting of six (6) credits.
EXEMPTION WITH CREDIT	Refers to cases where a student is granted exemption from UWI courses because the student has already passed courses in other programmes at UWI or passed courses of similar content at other recognized institutions. Students are not required to take replacement courses.
FREE ELECTIVES	Courses which are optional in the degree programme concerned and may be selected from any department or faculty. Please note that Level I courses cannot be used as electives in Level II/III of the programme.
LEVEL I, LEVEL II & LEVEL III	Represents the different standard of courses that must be completed in the undergraduate degree programme. Each level is designated by the first numeral in the course code. Levels II and III courses are equally weighted for the assessment of class of degree.
PREREQUISITES	Courses which must be completed before registration for another course is permitted.

1. QUALIFICATIONS FOR ADMISSION

ENGLISH LANGUAGE PROFICIENCY TEST (ELPT)

1.1 All applicants to the University of the West Indies are required to sit the English Language Proficiency Test (ELPT) to determine their level of entry to FOUN1006 Exposition for Academic Purposes or FOUN1008 Introduction to Professional Writing.

EXEMPTION FROM FOUN0100/ ELPT

1.2 Applicants in the categories below are NOT required to sit the test:

(a) Persons with any ONE of the following English Language qualifications:

- Grade 1-CXC/CSEC English A examination
- Grade A-GCE O'Level English Language examination
- Grade A-GCE A/O'Level General Paper examination
- Grades 1 & 2-CAPE Communication Studies
- Grade B or above-college English course from an approved university.

(b) Persons who are already holders of an undergraduate degree from the UWI or from an approved university.

FOREIGN LANGUAGE PROFICIENCY COURSE REQUIREMENT

1.3 All students registered in the School of Science Computing and Artificial Intelligence who do not have at least CSEC General Grade II before 1998, or Grade III after 1998, or its equivalent, in a foreign language are required to complete three (3) credits in one of the following courses.

- SPAN0101- Beginners' Spanish 1
- FREN0101- Beginners' French 1
- CHIN1001- Chinese Language 1A
- Sign Language

Any other language course as approved by the School of Humanities and Education at UWI FIC (Five Island Campus).

ALL international students whose first language is not English and who matriculated into the Science Computing and Artificial Intelligence (SoSCAI) with English as a Second Language (ESL) qualifications shall be exempted without credit from this requirement.

- Students may opt not to take a UWI foreign language course and choose instead the self-directed learning path to foreign language competency. Those who do so must demonstrate competency to the satisfaction of The UWI that is at the Common European Framework of Reference for Language: Learning, Teaching, Assessment (CEFR) A1 or its equivalent in other systems.
- Students who do not possess certification in a foreign language but might have pursued a foreign language may take a proficiency test to demonstrate their competence to the satisfaction of The UWI (i.e., CEFR A1 or its equivalent).

- Students may fulfil this requirement at any time during their undergraduate programme.

Table 1 presents a summary of the eligible courses for substitution and the options for the foreign language requirement within the School of Science, Computing, and Artificial Intelligence at FIC.

Table 1

SCHOOL COURSE	COURSE THAT CAN BE SUBSTITUTED	FOREIGN LANGUAGE OPTIONS (CHOOSE 1)
School of Science Computing and Artificial Intelligence (SoSCAI)	FOUN1301	Spanish/French

(c) Those who pass or are exempted from the test do two or one Level I English Language Foundation courses as required by the matriculation guidelines for their respective programme. The level 1 courses are: (1) FOUN1006 (required) and/or (2) FOUN1008). Those who fail or did not take the test (and do not possess one of the exemptions listed above) are required to pass the remedial course FOUN0100: Fundamentals of Written English and then to do the two Level I English Language Foundation courses.

2. TRANSFERS

INTER AND INTRA FACULTY TRANSFERS

2.1 Students in another School who have completed Level I of a degree programme of the University of the West Indies are eligible for transfer to Level II of a degree programme offered by the School of Science, Computing, and Artificial Intelligence. Such students must, at the time of transfer, have passed courses that satisfy the Level I requirements of the School of Science, Computing, and Artificial Intelligence and the prerequisites of the relevant courses of the programme into which the transfer is sought. Transfers are offered to students who have acquired a strong Level I record. (B+ average and above)

2.2 Students registered in the Faculties of Sciences and Technology on another Campus who have completed Level I of a degree programme are eligible for transfer to Level II in the School of Science, Computing, and Artificial Intelligence at the Five Islands Campus.

2.3 Transfer may also be offered to any student registered in any other Faculty of the University of the West Indies and who has successfully completed the Level I prerequisites to Levels II & III courses in the area of the intended major or special and has also completed the required Foundation Course(s).

2.4 Consideration for transfer will not be given to students in the year they were accepted to the Faculty. Students may, upon receipt of an offer from the Admission Office, choose to reject that initial offer and immediately request their desired Major.

2.5 Students approved for transfer must pursue the programme requirements outlined in the Handbook for the year approval was granted.

3. COURSE OF STUDY

Candidates for any of the degree programmes must pursue a course of study comprising at least ninety (90) credits, at least thirty (30) credits at Level I and at least sixty (60) credits at Levels II and III. The Faculty Board may require that the timing of registration in particular courses be such as to ensure that the course of study extends over either at least five (5) semesters or two (2) summer school Sessions or six (6) semesters.

LEVEL I REQUIREMENTS

3.1 Students MUST complete ALL the requirements for Level I and Level II/III of their degree programme as indicated here. Level I consists of a minimum of thirty (30) credits or ten (10) three 3-credit Level I courses, depending on the choice of degree i.e., a single major, a double major, one (1) major and one (1) or two (2) minors or a special. The choice made will determine if additional courses must be taken.

Requirements for Level I of the degree are as follows:

a. Three (3) University foundation courses
b. Prerequisites for Level II courses and/or free electives
c. Any other courses designated by the respective departments which are not included in the above.

UNIVERSITY FOUNDATION COURSES

3.2 As of 1998-99 all students registered at the University of the West Indies will be required to complete a minimum of nine (9) credits of Foundation Courses.

Foundation courses are University-wide courses, and they are designed to promote sensitivity to and awareness of distinctive characteristic features of Caribbean cosmologies, identities, and cultures.

a. FOUN1006 Exposition for Academic Purposes
b. FOUN1008 Introduction to Professional Writing
c. FOUN1101 Caribbean Civilization
d. FOUN1201 Science, Medicine, and Technology in Society
e. FOUN1301 Law, Governance, Economy, and Society
f. Any other course approved for the purpose by the Board of Undergraduate Studies

Students registered in the School of Science, Computing and Artificial Intelligence must include among such Foundation Courses FOUN1008 Introduction to Professional Writing or FOUN1006 Exposition for Academic Purposes.

The elective Foundation course, FOUN1301 Law, Governance, Economy, and Society, will count for credit in the programme of the School of Science, Computing and Artificial Intelligence for persons pursuing Computer Sciences or Information Technology based programmes.

Exemption in whole or in part from the requirements under [3.2(a- e)] may be granted from time to time by the Board for Undergraduate Studies.

4. REQUIREMENTS FOR ENTRY TO LEVELS II AND III

- Students are required to satisfy pre-requisites for Levels II and III courses
- A minimum of twenty-four (24) credits at Level I including eight core courses are required to progress to Level II.

5. REQUIREMENTS FOR THE AWARD OF THE DEGREE

5.1 In order to qualify for the award of a degree a student must:

- Have completed a minimum of ninety (90) credits (normally equivalent to thirty (30) semester courses)
- Have completed at least thirty (30) credits from Level I semester courses (including the Foundation Course requirements), and at least sixty (60) credits from Levels II and III semester courses

Students registering for more than twenty (20) Level II/III courses must indicate in writing which of the additional courses are "not for credit at the time of registration". Students will not be permitted to register for "not for credit" courses after satisfying the requirements for the award of the degree.

5.2 Degrees are offered in the following categories:

SPECIAL MAJOR

5.2.1 The degree majors with which the above minors may be combined will be approved by the Faculty Board and Board for Undergraduate Studies and listed as programme offerings in the School's Handbook.

5.2.2 Students may also request to combine a School of Science, Computing and Artificial Intelligence major with a minor offered by another School. To do this, the permission of the Director of Academic Affairs must be sought and obtained.

5.2.3 A student may, with the permission of the Director of Academic Affairs, change any major, special, or minor for which that student is registered.

6. REGULATIONS FOR FULL-TIME PROGRAMME

6.1 A full-time student:

(a) Shall complete the degree programme in no more than eleven (11) semesters and five (5) summer school sessions;
(b) Will, unless the Academic Board approves otherwise on the recommendation of the Faculty Board, be required to register for ten (10) semester courses in any one year and five (5) semester courses in any one semester. Permission may be sought for no more than one (1) additional course per semester by any student who needs that one (1) course for completion of the requirements for the degree or who has been awarded a grade of A as the examination mark for more than half of the courses for which that student has been examined when registered in the Faculty.
(c) Will be required to withdraw from the faculty unless he/she has gained at least:

- fifteen (15) credits at the end of the second semester
- thirty-three (33) credits at the end of the fourth semester
- fifty-one (51) credits at the end of the sixth semester
- sixty-nine (69) credits at the end of the eighth semester

N.B. Credits gained from courses done in another programme will not be counted towards the rate of progress.

7. REGULATIONS FOR PART-TIME PROGRAMME

7.1 (a) A part-time programme is offered for Level I of the B.Sc. degree at Five Islands Campus. Level II and III are available in all programmes offered at the Five Islands Campus.

(b) The Faculty Board may require that the timing of registration for particular courses be such as to ensure that the course of study for the Level I programme extends over at least three (3) semesters inclusive of one (1) summer school session. At the Five Islands Campus, usually part-time students will complete a maximum of six (6) courses in the first year, eight (8) courses or (24 credits) in level 2, eight (8) courses in the third year and eight (8) courses in their fourth year. Part-time students can register for up to three (3) courses or (9 credits) in Summer School.

7.2 (a) A part-time student will be required to withdraw from the school unless he/she has gained:

- six (6) credits at the end of the second semester
- eighteen (18) credits at the end of the fourth semester
- twenty-four (24) credits at the end of the sixth semester
- thirty-nine (39) credits at the end of the eight semester
- fifty-four (54) credits at the end of the tenth semester
- seventy-two (72) credits at the end of twelfth semester
- ninety (90) credits at the end of the fourteenth semester

(b) Part-time students shall usually be expected to register for a maximum of eighteen (18) credits (6 courses) in the first year and a maximum of nine (9) credits (3 courses) in any one semester.

(c) Upon acquiring fifteen (15) credits at level 1 with a GPA of 3.0 or above, a part- time student may then register as a full-time student (Allowed 12 credits/4 courses per Semester).

(d) A part-time student may be allowed to register for twenty-one (21) credits if he/ she has maintained a minimum GPA of 3.3. Finalizing part-time students may also be allowed to register for twenty-one (21) credits.

(e) Part-time in the School is defined by a student's workload per semester and does not mean evening studies. While some Level I courses are offered in the evening, most of the courses at Levels II and III are taught during the day only. Thus, students registered part-time must be prepared to attend classes between 8 a.m. and 9 p.m.

(f) Once a Part-time student transfers into the Full-time programme, he/she is required to maintain the rate of progress mandated for the Full-time programme.

N.B. Credits gained from courses done in another programme will not be counted towards the rate of progress.

8. REGULATIONS FOR GPA STUDENTS

(a) Except where otherwise prescribed in Faculty Regulations, a student whose GPA for a given semester is less than or equal to 2.00 shall be deemed to be performing unsatisfactorily and shall be placed on warning. A student on warning whose GPA for the succeeding semester is less than 2.00 will be required to withdraw.

(b) A student on warning shall be counselled by the Director of Academic Affairs or a designated faculty advisor. Such a student may, except where otherwise prescribed in Faculty Regulations, be permitted by the Academic Board on the recommendation of the Faculty Board to carry a reduced course load.

9. REGISTRATION/EXAMINATIONS

(a) Students will be examined during each semester and the summer session in the courses for which they are registered.

(b) A course may be examined by one or more of the following methods:

(i) written examination papers
(ii) oral (under the conditions in Regulation 1 below)
(iii) Practical examinations
(iv) coursework (which may include written in-course tests, practical work, dissertations, essays, projects, studies, and other forms of coursework exercises as approved by the Faculty Board, or the Campus Committee on Examinations as appropriate).

(c) A student failing a course may subject to the rate of progress requirements of these Regulations be allowed to substitute another approved course in a subsequent semester or repeat the failed course.

(d) All optional courses (electives) listed in the various degree programmes in the Faculty Handbook will not necessarily be available in any one year.

(e) Deadlines for changes of registration including withdrawal from or addition of courses will be as prescribed in University Regulations.

(f) Registration for a course constitutes registration for the examination in that course.

(g) A student who does not take an examination in a course for which he/she is registered is deemed to have failed that examination unless permission to be absent has been granted.

(h) A student who, on grounds of illness or in other special circumstances as referred to in Examination Regulations fails to take an examination in a course for which he/ she is registered, may be given special consideration by the Board of Examiners to take examination at the next available opportunity, without penalty

(i) Students are asked to pay special attention to Examination Regulation which states: "Any candidate who has been absent from the University for a prolonged period during the year for any reason other than illness or whose attendance at prescribed lecturers, classes, practical classes, tutorial or clinical instructions has been unsatisfactory or who has failed to submit essays or other exercises set by his teachers may be debarred by the relevant Academic Board, on the recommendation of the relevant Faculty Board, from taking any University examinations."

10. ORAL EXAMINATIONS FOR FINAL YEAR STUDENTS

(a) The Board of Examiners may recommend to the School concerned that a student

who has failed the last one (1) or two (2) course(s) required to complete the degree be offered an Oral Examination in that one (1) or those two (2) courses provided that he/she has obtained in each instance a mark of at least 45% for the course(s). If an Oral Examination is granted the student may choose to decline the offer. The Oral Examination, which will be of maximum length of one hour, will be held as soon as possible after the previous examination and within the academic year in which the student is expected to graduate. The student must contact the department concerned immediately so that arrangements may be made for the Oral Examination.

(b) The Oral Examination will concern the course as a whole, and not be restricted to the questions set in the examination which the student did. The First Examiner and at least one (1) other must be present at an Oral Examination.

(c) If the examination is passed, the student cannot be awarded a grade higher than 50 - C and this grade will replace that previously gained for the entire evaluation in that course.

(d) If he/she fails the Oral, the student will not have any right of appeal or review.

11. EXAMINATIONS ONLY

(a) Final year students failing one (1) or two (2) (but no more than two) courses may apply to register for "Exams Only" in the course(s).

(b) The candidate's assessment will be based entirely on the examinations which will count for 100%.

12. COURSEWORK

(a) In the case of examination by coursework, only a student gaining an overall mark higher than 50% but passing in only one component will be required to repeat at the next available sitting the failed component.

(b) A student who is absent from a coursework examination may apply to the Head of School for exemption from this examination no later than one (1) week following the date of this examination. He/she must at the same time submit to the Campus Registrar a justification for such absence (such as, in case of illness, a medical certificate complying with any applicable Examination Regulations). The Head shall consider any such request for exemption in consultation with the relevant Head of School and course lecturer. If the exemption is granted, the candidate's assessment will be based entirely on the final examination.

(c) A student may request to submit coursework assignments, essays, etc. after the stipulated deadline date on the basis of appropriate justification (such as, in case of illness, a medical certificate complying with any applicable Examination Regulations). This request must be made within 48 hours after the stipulated deadline date and must be addressed to the Director of Academic Affairs, who in consultation with the relevant Head of School and course lecturer may allow the extension. The Director of Academic Affairs, acting on advice of the relevant Head of School and course lecturers, may consider requests for extension of the coursework assignment, essays etc. If the extension is not granted the student will not be given any special consideration and will be graded based on both coursework and final examination.

(d) If a student misses an examination for medical reasons or other extenuating

circumstance approved by the Board of Examiners, he/she will be obliged to register again for the full course. However, the Faculty may allow the student's coursework/ mid-term marks (if the coursework is within one academic year) to be applied and he/she will only have to attend classes and write the final examination.

13. LEAVE OF ABSENCE

(a) A candidate who for good reason wishes to be absent from an academic programme for a semester or more must apply for formal leave of absence to the Campus Faculty Board, through the appropriate Head of School stating the reason for the application.

(b) The length of such leave of absence, if granted, will be subject to approval by the Academic Board of the Campus concerned, but will not exceed one academic year in the first instance terminating at the end of the academic year for which the application is approved.

(c) Leave of absence will not be granted for more than two (2) consecutive academic years.

(d) Leave of absence may be granted for one semester or for an academic year.

(e) Applications for leave of absence for a semester shall normally be submitted by the end of the third week of the relevant semester.

(f) Applications for leave of absence for the academic year shall normally be submitted at the end of the third week of semester I.

Note: Students who have been attending classes and then apply for Leave of Absence after the deadline date are liable for payment of full tuition fees for the semester/ academic year whether they sit examinations or not.

14. WITHDRAWAL

(a) A student whose GPA for a given semester is less than or equal to 2.00 shall be deemed to be performing unsatisfactorily and shall be placed on warning. A student on warning whose GPA for the succeeding semester is less than 2.00 will be 'Required to Withdraw' (RTW).

(b) A candidate who has been required to withdraw from the Faculty may apply to the Faculty for re-admission one (1) year after withdrawal. Each case will be considered on its own merit but will only succeed if the Faculty is satisfied that the circumstances attending the reasons for the withdrawal have been altered substantially.

(c) Students thus admitted to a Faculty may in accordance with its regulations be granted exemption from Level I 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. Level II University courses, for exemption purposes, may be treated the same way as Level I Faculty courses.

(d) Students from one (1) Faculty who had been required to withdraw from the University for failing to complete their degree programme within the stipulated period may be admitted to another Faculty after a minimum period of one (1) year had elapsed since their withdrawal. Such students may be granted exemption from Level I courses relevant to the new programme subject to regulations (b) and (c) above.

15. AWARD OF DEGREES

15.1 Notification of Results

For those candidates who have completed the requirements of the B.Sc. degree a pass list shall be published and arranged alphabetically in the following categories:

- First Class Honours
- Second Class Honours
- Upper Division
- Lower Division
- Pass

16. GRADE POINT AVERAGE SYSTEM

(a) These regulations shall apply to all students admitted to the University commencing academic year 2003-2004.

(b) The degree class to be awarded shall be determined based on a weighted Grade Point Average (GPA).

(i) In the calculation of the weighted GPA a weight of zero shall be attached to all Level I courses.

(ii) Levels II and III courses shall have equal weight in the determination of the weighted GPA.

(iii) Core courses satisfying the requirements of specials, majors, and minors must be considered in the determination of the weighted GPA.

(c) A course designated at not-for-credit (NFC) shall not count in the determination of the weighted GPA. (d) The class of degree shall be awarded as follows:

- First Class Honours - Weighted GPA of 3.6 and above
- Second Class Honours - Upper Division - Weighted GPA 3.00 - 3.59
- Second Class Honours - Lower Division - Weighted GPA 2.50 - 2.99
- Pass - Weighted GPA 2.00 - 2.4

17. MARKING SCHEME FOR EXAMINATION IN THE SCHOOL OF SCIENCE, COMPUTING AND ARTIFICIAL INTELLIGENCE

(a) In determining GPA, the grades with corresponding quality points shall be as defined in the University Regulations governing the GPA. The authorized marking scheme is as follows:

REVISED GRADE DEFINITIONS W.E.F. 1 AUGUST 2020 TABLE

GRADE	% GRADE	GRADE RANGE	POINT DEFINITION	GRADE DESCRIPTION
A+	90-100	4.3	Exceptional	Demonstrates exceptional performance and achievement in all aspects of the course. Exceptional application of theoretical and technical knowledge that demonstrates achievement of the learning outcomes. Goes beyond the material in the course and displays exceptional aptitude in solving complex issues identified. Achieves the highest level of critical, compelling, coherent and concise argument or solutions within the course.
A	80–89	4.0	Outstanding	Demonstrates outstanding integration of a full range of appropriate principles, theories, evidence and techniques. Displays innovative and/or insightful responses. Goes beyond the material with outstanding conceptualization, which is original, innovative and/or insightful. Applies outstanding critical thinking skills.
A-	75-79	3.7	Excellent	Demonstrates excellent breadth of knowledge, skills and competencies and presents these in appropriate forms using a wide range of resources. Demonstrates excellent evidence of original thought, strong analytical and critical abilities; excellent organizational, rhetorical and presentational skills.
B+	70-74	3.3	Very Good	Demonstrates evidence of very good critical and analytical thinking in most aspects of the course. Very good knowledge that is comprehensive, accurate and relevant. Very good insight into the material and very good use of a range of appropriate resources. Consistently applies very good theoretical and technical knowledge to achieve the desired learning outcomes.
B	65-69	3.0	Good	Demonstrates good knowledge, rhetorical and organizational skills. Good insight into the material and a good use of a range of appropriate resources. Good integration of a range of principles, techniques, theories and evidence.
B-	60-64	2.7	Satisfactory	Displays satisfactory evidence of the application of theoretical and technical knowledge to achieve the desired learning outcomes. Demonstrates sound organizational and rhetorical skills.

GRADE	% GRADE	GRADE RANGE	POINT DEFINITION	GRADE DESCRIPTION
C+	55-59	2.3	Fair	Demonstrates fair breadth and depth of knowledge of main components of the subject. Fair evidence of being able to assemble some of the appropriate principles, theories, evidence and techniques and to apply some critical thinking.
C	50-54	2.0	Acceptable	Demonstrates acceptable application of theoretical and technical knowledge to achieve the minimum learning outcomes required in the course. Displays acceptable evidence of critical thinking and the ability to link theory to application.
F1	40-49	1.7	Unsatisfactory	Demonstrates unsatisfactory application of theoretical and technical knowledge and understanding of the subject. Displays unsatisfactory ability to put theory into practice; weak theoretical and reflective insight. Unsatisfactory critical thinking, organizational and rhetorical skills.
F2	30-39	1.3	Weak	Weak overall performance with very limited knowledge and understanding of the subject. Little evidence of theoretical and reflective insights. Weak organizational and rhetorical skills.
F3	0-29	0	Poor	Overall poor or minimal evidence of knowledge and understanding of the subject. Displays little ability to put theory into practice; lacks theoretical and reflective insights. Incomplete breadth and depth of knowledge on substantive elements of the subject. Little or no evidence of critical engagement with the material. Responses are affected by irrelevant sources of information, poor organizational and rhetorical skills.

18. CO-CURRICULAR CREDITS

(a) Students will be eligible for no more than three (3) credits for involvement in co-curricular activities. The activities may be campus-specific.

(b) Co-curricular credits will be awarded on the following basis:

- Students must be involved in the activity for at least one (1) semester;
- Explicit learning outcomes must be identified for each activity.
- There must be clearly defined mode(s) of assessment for each activity
- The Office of Student Services and the School of Education on each campus will administer the award of credits.

(c) The grading of co-curricular credits will be pass/fail.

(d) All co-curricular activities/programmes must be approved in advance by the Faculty and Academic Board.

(e) Subject to Faculty Regulations, co-curricular credits will form part of the ninety (90) credits for a degree. However, in special circumstances, if credits are earned in excess of those required for the degree, these and the associated activity will be included on the student's transcript.

19. AEGROTAT DEGREE

19.1 A candidate taking examinations in respect of a final degree, diploma, or certificate programme and who had been absent through illness from one or more papers, may apply for the award of an aegrotat degree, diploma, or certificate on the following conditions.

(a) Where the final examination is in two (2) or more parts (the award of the degree, diploma, or certificate depending on performance in each of these parts) and he/ she has successfully completed the first one (1) or two (2) parts or more than half of the final part but has been absent from the remainder of the examinations for the final part.

(b) Where the final examination is in two or more parts (the award of the degree, diploma, or certificate depending on performance in each of these parts) and he/ she has successfully completed the first one or two parts or more than half of the final part but has been absent from the remainder of the examinations for the final part.

(c) Where the final examination is in two parts and the student has completed the first part (level II) with a B average or higher and his course work during the final year of the course has been of a consistently high standard, but he/she has been absent from the other part of the examinations.

(d) The Examiners consider that in the work which the candidate has submitted at such of the final examination as he/she had attended, he/she reached a standard which if also reached in the remainder of the examination, would have qualified him/her for the award of a degree, diploma, or certificate.

19.2 All applications for an aegrotat degree, diploma, or certificate must be referred by the Registrar to the Faculty Board of Examiners and the Board for Examinations for a recommendation to the Board of Undergraduate Studies (BUS). Applications from or on behalf of candidates must be accompanied by a medical certificate signed by medical personnel appointed for this purpose by the University and shall reach the Registrar not later than thirty days from the last examination paper written by the candidate.

19.3 In assessing an application for an aegrotat degree, diploma, or certificate, reports from Heads of School on the candidate's work should be taken into consideration. Oral examinations, where possible, by internal examiners may be an aspect of examinations for the award of an aegrotat degree.

19.4 An aegrotat degree, diploma or certificate will be awarded without distinction or class.

19.5 Holders of an aegrotat degree, diploma or certificate will not be permitted to re-enter for the same examination but may proceed to a higher degree if accepted by the Board for Graduate Studies and Research.

GRADING SYSTEM

The following designations may be assigned, but shall not be used in the calculation of Grade

Point Average:

PC: Preliminary Credits - used for matriculation purposes or the satisfying of prerequisites only

EX: Exemption

EI: Examination Irregularity – Candidate disqualified from examination on account of breach of the Regulations

EQ: Examination Query

The following designations may be assigned and shall count towards the GPA:

FA: When a student is absent from an examination without a valid reason

FC: Failed Coursework – indicates that a candidate has failed to satisfy the Examiner in the coursework component of the course

FE: Failed Examination – when a candidate has successfully completed the coursework requirement but has failed to satisfy the Examiners in the examination component of the course

AM: Absent Medical

IM: Incomplete Medical

V: Audited - when the course has been taken in accordance with Regulation 14

NV: When a student has been permitted to audit a course but has not done so satisfactorily

P: A pass obtained in a course taken on a Pass/Fail basis

F: Fail

I: Incomplete - indicated that the student has made progress in a course but at the end of the semester has not finished the work required to receive a letter grade. An I designation is not counted in credit hours earned, or quality hours until a letter grade is reported. If neither a letter grade nor notification of an extension of time is received by the Registry from the Office of Dean, the 'I' designation is replaced by an F letter grade at the end of the first six weeks into the next semester. An extension of time may be granted but shall not normally extend beyond the end.

NR: Not Reported - Grade not yet available.

IP: In Progress - when a dissertation, thesis, project, student teaching, practicum, internship, proficiency requirement, or other course intended to last more than one semester is not completed during the semester in which the student is registered. The IP designation must be replaced with an appropriate grade on completion of the course.

1. The scheme to be used for conversion of numerical marks to letter grades shall be as prescribed in Faculty regulations as follows:

REVISED AUGUST 2020 - GRADING POLICY		
GRADE	QUALITY POINTS	MARK%
A+	4.3	90-100
A	4.0	80-89
A-	3.7	75-79
B+	3.3	70-74

REVISED AUGUST 2020 - GRADING POLICY		
B	3.0	65-69
B-	2.7	60-64
C+	2.3	55-59
C	2.0	50-54
FI	1.7	40-49
F2	1.3	30-39
F3	0	0-29

2. The courses used to determine the Weighted GPA for the class of degree to be awarded shall be as prescribed in the School's Regulations.

3. Where a course has been repeated, the penalty to be applied for failure and the grade used in the computation of the student's GPA if the course is passed shall be as prescribed in Faculty Regulations.

4. For the purpose of determining the Weighted GPA, failed courses shall be treated as prescribed in the School's Regulations.

5. (i) Where credit for a course taken at another institution is requested, it is the student's responsibility to provide all the information needed by the University to enable it to assess the course.
   (ii) Credit hours earned from another institution at the time of admission to the University of the West Indies will not be used in the computation of a grade point average.

6. The following shall apply to credits earned by a UWI undergraduate from another approved institution:
   (i) A UWI student who wishes to take academic courses elsewhere and apply those credits toward the UWI degree must obtain approval in advance from the relevant Academic Board on the recommendation of the Board of the School in which he/she is registered.
   (ii) A student must have obtained a minimum UWI GPA of 3.00 to be approved to take courses as an exchange/transfer student.
   (iii) Only the grade equivalent as determined by the Board for Undergraduate Studies of the results achieved and not the marks or grades so earned at another institution shall be used in the computation of the student's GPA.

7. (i) Except where otherwise prescribed in the School's Regulations, a student whose GPA for a given semester is less than or equal to 2.00 shall be deemed to be performing unsatisfactorily and shall be placed on warning. A student on warning whose GPA for the succeeding semester is less than 2.00 will be required to withdraw. However, a student may be reinstated if his/her GPA improves beyond 2.00 by credits obtained in Summer School. Then the credits would be rolled in to the GPA of the preceding Semester of the academic year.
   (ii) A student on warning shall be counselled by the Director of Academic Affairs

or a designated faculty advisor. Such a student may, except where otherwise prescribed in the School's Regulations, be permitted by the Academic Board on the recommendation of the School Board to carry a reduced course load.

8. (i) A registered student may be permitted to audit a course on the approval of the Director of Academic Affairs and the Head of School.
   (ii) Auditing means recorded attendance at the lectures, tutorials, and laboratory sessions for a given course without the requirement of sitting the final exam.
   (iii) Satisfactory attendance certified by the Head of School shall be awarded the designation V. In absence of such certification, the designation NV shall be recorded.
   (iv) No academic credit may be granted for auditing a course.
9. (i) A student who voluntarily withdraws from the University and who applies for re-admission within five (5) years shall be granted exemption and credit for courses previously passed, subject to the time limit for the maintenance of credits stipulated in the relevant School's Regulations and subject to the stipulation that the courses previously passed are not determined by the Board of the relevant School to be obsolete.
   (ii) Where exemption and credit are granted in accordance with (i), the grades obtained at previous attempts at such courses shall be used in the determination of the student's GPA.
10. A student who was required to withdraw for reasons of failure to progress as prescribed in Faculty Regulations may be readmitted on the following conditions:
   (i) A minimum of one (1) year must have passed since the date of withdrawal;
   (ii) All grades previously obtained shall continue to apply for the purpose of determining the student's GPA;
   (iii) Work done during the period between the student being required to withdraw and being granted readmission may be eligible for credit under Regulation 11.
11. Where there is a conflict between Faculty Regulations and these regulations, these Regulations shall apply.

HOW TO CALCULATE YOUR WEIGHTED GPA

STEP ONE
A 'grade point' is assigned for every course in which you receive a final grade. For example, if you receive an A as a final grade, you will be assigned a grade point of 4.0.

STEP TWO
The grade point assigned for each course completed is multiplied by the 'credit hours' of the course to determine your 'quality points.' For example, if you receive a grade point of 3.7 [equivalent of letter grade A-F] for a 3-credit course the quality points would be calculated as follows: 3.7 X 3 = 11.1 quality points

STEP THREE
Your 'Weighted GPA' is the average obtained by dividing the total quality points earned in your programme to date by the total credit hours taken, excluding courses taken on a pass/fail basis, audited courses, courses taken for preliminary credit, incomplete courses and any other courses which do not count towards the class of degree according to Faculty regulations.

For example: 54 quality points earned divided by 15 credit hours [equivalent to five (5) 3-credit courses] = a Weighted GPA of 3.6

UNIVERSITY REGULATIONS ON PLAGIARISM

APPLICATION OF THESE REGULATIONS

1. 1. These Regulations apply to the presentation of work by a student for evaluation, whether or not for credit, but do not apply to invigilated written examinations.

DEFINITION OF PLAGIARISM

2. In these Regulations, "plagiarism" means the unacknowledged and unjustified use of the words, ideas, or creations of another, including unjustified unacknowledged quotation and unjustified unattributed borrowing; "Level 1 plagiarism" means plagiarism which does not meet the definition of Level 2 plagiarism. "Level 2 plagiarism" means plagiarism undertaken with the intention of passing off as original work by the plagiarizer work done by another person or persons.

3. What may otherwise meet the definition of plagiarism may be justified for the purposes of Regulation 2 where the particular unacknowledged use of the words, ideas, and creations of another is by the standards of the relevant academic discipline a function of part or all of the object of the work for evaluation whether or not for credit, for example:

   (a) The unacknowledged use is required for conformity with presentation standards;
   (b) The task set or undertaken is one of translation of the work of another into a different language or format;
   (c) The task set or undertaken requires producing a result by teamwork for joint credit

regardless of the level of individual contribution;

(d) The task set or undertaken requires extensive adaptation of models within a time period of such brevity as to exclude extensive attribution;

(e) The task set or undertaken requires the use of an artificial language, such as is the case with computer programming, where the use of unoriginal verbal formulae is essential.

4. It is not a justification under Regulations 2 and 3 for the unacknowledged use of the words, ideas, and creations of another that the user enjoys the right of use of those words, ideas, and creations as a matter of intellectual property.

OTHER DEFINITIONS

5. In these Regulations, "Chairman" means the Chairman of the relevant Campus Committee on Examinations; "Examination Regulations" means the Examination and other forms of Assessment Regulations for First Degrees Associate Degrees Diplomas and Certificates of the University; "set of facts" means a fact or combination of facts.

EVIDENCE OF PLAGIARISM

6. To constitute evidence of plagiarism under these Regulations, there shall be identified as a minimum the passage or passages in the student's work which are considered to have been plagiarized and the passage or passages from which the passages in the student's work are considered to have been taken.

STUDENT STATEMENT ON PLAGIARISM

7. When a student submits for examination work under Regulation 1, the student shall sign a statement, in such form as the Director of Administration may prescribe, that as far as possible the work submitted is free of plagiarism including an unattributed quotation or paraphrase of the work of another except where justified under Regulation 3.

8. Quotation or paraphrase is attributed for the purpose of Regulation 7 if the writer has indicated using conventions appropriate to the discipline that the work is not the writer's own.

9. The University is not prohibited from proceeding with a charge of plagiarism where there is no statement as prescribed under Regulation 7.

ELECTRONIC VETTING FOR PLAGIARISM

10. The results of any electronic vetting, although capable, where the requirements of Regulation 7 are satisfied, of constituting evidence under these Regulations, are not thereby conclusive of any question as to whether or not plagiarism exists.

LEVEL 1 PLAGIARISM

11. In work submitted for examination where the Examiner is satisfied that Level 1 plagiarism has been committed, he/she shall penalize the student by reducing the mark which would have otherwise been awarded considering any relevant regulations of the School of Business and Management.

LEVEL 2 PLAGIARISM

12. Where an examiner has evidence of Level 2 plagiarism in the material being examined, that examiner shall report it to the Head of School or the Director of Academic Affairs

and may at any time provide the Director of Administration with a copy of that report. In cases where the examiner and the Director of Academic Affairs are the same, the report shall be referred to the Head of the School and the Director of Administration.

13. Where any other person who in the course of duty sees material being examined which he or she believes is evidence of Level 2 plagiarism that other person may report it to the Head of School or the Director of Academic Affairs and may at any time report it to the Director of Administration who shall take such action as may be appropriate.

14. Where a Director of Academic Affairs or Head of School receives a report either under Regulation 12 or 13, the Director of Academic Affairs or Head of School, as the case may be, shall:

(a) where in concurrence with the report's identification of evidence of Level 2 plagiarism, report the matter to the

(b) Director of Administration; or

(c) where not concurring in the identification of evidence of plagiarism, reply to the examiner declining to proceed further on the report; or

(d) where concluding that there is evidence of Level 1 plagiarism, reply to the examiner indicating that conclusion and the Examiner shall proceed as under Regulation 11.

15. Where a report is made to the Director of Administration under Regulation 14a or 16, the Director of Administration shall lay a charge and refer the matter to the Campus Committee on Examinations.

16. Where the Director of Administration receives a report alleging Level 2 plagiarism from the Examiner or any other person except the Director of Academic Affairs or Head of School, the Director of Administration shall refer the matter to a senior academic to determine whether there is sufficient evidence to ground a charge of plagiarism and where such evidence is found, the Director of Administration shall proceed as under Regulation 15.

17. Where the matter has been referred to the Campus Committee on Examinations pursuant to Regulation 15, the proceedings under these Regulations prevail, over any other disciplinary proceedings within the University initiated against the student based on the same facts and, without prejudice to Regulation 21, any other such disciplinary proceedings shall be stayed, subject to being reopened.

18. If the Campus Committee on Examinations is satisfied, after holding a hearing, that the student has committed Level 2 plagiarism, it shall in deciding on the severity of the penalty take into consideration: (a) the circumstances of the particular case; (b) the seniority of the student; and (c) whether this is the first or a repeated incidence of Level 2 plagiarism

19. Where the Campus Committee is of the view that the appropriate penalty for an offence of Level 2 plagiarism is for the student to be: awarded a fail mark; excluded from some or all further examinations of the University for such period as it may determine; dismissed from the University, it shall make such recommendation to the Academic Board.

CLEARANCE ON A CHARGE OF LEVEL 2 PLAGIARISM

20. A determination of the Campus Committee on Examinations that Level 2 plagiarism has not been found will be reported to the Director of Administration at the Five Islands Campus, who shall refer it to the Examiner and notify the student. Where the Committee has not identified Level 2 but has identified Level 1, it shall be reported to the Director of

Administration who shall refer it to the examiner.

LEVEL 2 PLAGIARISM: APPEAL TO THE SENATE

21. A student may appeal to the Senate from any decision against him or her on a charge of plagiarism made by Academic Board.

DELEGATION BY DIRECTOR OF ACADEMIC AFFAIRS OR HEAD OF SCHOOL

22. The Director of Academic Affairs or Head of School, as the case may be, may generally or in a particular instance delegate that officer's functions under these Regulations.

CONFLICT OF INTEREST DISQUALIFICATION

23. Any person who has at any time been an examiner of work or been involved in procedures for laying charges in relation to which an issue of plagiarism is being considered under these regulations shall withdraw from performing any functions under these regulations other than those of supervisor and examiner.

GENERAL REGULATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN THE SCHOOL OF SCIENCE, COMPUTING, AND ARTIFICIAL INTELLIGENCE

All students of the University are subject to the University Regulations for Students approved by the Senate of the UWI.

Where there is conflict between the regulations of any School and the University Regulations, the University Regulations shall apply.

A. QUALIFICATION FOR ADMISSION

1. To be admitted to the three-year degree programme, candidates must satisfy the University requirements for Matriculation (see The UWI University Regulations for Students) and have passed Mathematics and two approved science subjects at CSEC General Proficiency level at Grades I, II, or, since 1998, Grade III (or equivalent qualification).

PLEASE SEE BELOW THE APPROVED LIST OF SCIENCE CSEC GENERAL PROFICIENCY/GCE O-LEVEL SUBJECTS:

- Additional Mathematics
- Biology
- Chemistry
- Computer Science
- Geography
- Information Technology (General)
- Integrated Science
- Physics

  And

  a. CAPE or GCE A' Level passes in a minimum of two (2) subjects. One of the two A-Level passes must be in Pure Mathematics

PLEASE SEE BELOW THE APPROVED LIST OF SCIENCE CAPE/GCA A-LEVEL SUBJECTS:

- Applied Mathematics*
- Biology
- Botany

- Chemistry
- Computer Science
- Environmental Science
- Further Mathematics
- Geography
- Geology
- Pure and Applied Mathematics
- Zoology
- *The following cannot be counted together:

  (i) Further Mathematics with Applied Mathematics
  (ii) CAPE/GCE A-Level;
  (iii) Mathematics (Pure and Applied) with Pure
  (iv) Mathematics or Applied Mathematics at CAPE/GCE A-Level.

  OR

  b. Have an approved Associate Degree with a GPA of 2.5 (or equivalent qualification) or higher, from a Tertiary Level Institution. (N.B. Candidates must also satisfy Departmental Requirements).

2. To be admitted to the four-year degree programme, candidates must satisfy the University requirements for Matriculation (see The UWI University Regulations for Students) and have passed Elementary Mathematics at CSEC General Proficiency level at Grades I, II or, since 1998, Grade III (or equivalent qualification) plus at least two of the disciplines listed.

EXEMPTION WITH CREDIT

The following list of exemptions applies to students in the School of Science, Computing, and Artificial Intelligence.

CAPE SUBJECTS	UWI SUBJECTS
CAPE Computer Science UNIT I	COMP0001- Preliminary Computer Science I
CAPE Computer Science UNIT II	COMP0002- Preliminary Computer Science II

B. OUTLINE OF THE DEGREE PROGRAMME

1. The degree of B.Sc. is awarded based on a programme of studies comprising combinations of courses in Science disciplines, together with certain Foundation courses.

2. The School of Science, Computing, and Artificial Intelligence (SoSCAI) offers the following Bachelor's degrees in Science:

   a. A degree with a single Major (30 credits minimum from Levels 2 and 3)
   b. or a double Major in one (1) or two (2) Science disciplines (2 x 30 credits minimum or 1 x 60 credits minimum, from Levels 2 and 3).
   c. A degree with a single Major in a Science discipline plus (i) one (1) or two (2) Minors from other distinct Science disciplines (each with 15 credits minimum from Levels 2 and 3)

      (i) a Major, or one (1) or two (2) Minors, from other Faculties. Out-of-School Majors and Minors are governed by the regulations of the School of origin.

Only certain such combinations are allowed, and these are considered options.

d. An interdisciplinary degree that offers an integration of courses from multiple disciplines to form one degree programme

3. The following types of courses, which may consist of both theoretical and practical parts, are offered by the University:

   a. Courses taught by the SoSCAI faculty include Preliminary (Level 0) and Levels 1, 2 and 3 courses. (Preliminary courses may be used to satisfy entry requirements of Regulation 1 above, but do not contribute towards the requirements for the award of a degree.)
   b. Service courses, which provide students with basic techniques and skills needed for dealing with the academic programme.
   c. Approved Out-of-School courses which may contribute toward the requirements for the award of a degree.
   d. Foundation courses which are given throughout the University to augment the general education of students.
   e. Co-curricular activities approved for credit by the Academic Board. A maximum of three (3) credits for co-curricular activities may be included as part of the credits required for the award of a degree but shall not be considered in the determination of the Cumulative GPA or the class of degree. They may not be substituted for Foundation Courses. Co-curricular credits gained in excess of three (3) will be entered on the student's transcript but will not contribute toward the requirements for the degree.

4. Courses normally extend over no more than one (1) semester, but in special cases may extend over two (2) semesters. The contact hours for a course are expressed in terms of Credit Hours (credits) and the credit-rating of a course is determined by the Faculty which administers the course.

5. To be eligible for award of the degree, candidates must:

   a. a. has been in satisfactory attendance for a period equivalent to at least six (6) semesters of full-time study from entry into Level 1; and
   b. b. has passed courses totaling a minimum of ninety-three (93) credits from Level 1, 2, and 3 School and Foundation courses for the degree as follows:

      - Level 1 24
      - Level 2 and Level 3 60
      - Foundation courses 9
      - Total 93

   A minimum of twelve (12) credits at Level 1 and thirty (30) credits at Levels 2 and 3 must be taken from in-School courses.

   - Specific Options, or Cross-School programmes, may require more than ninety-three (93) credits.
   - A Degree GPA of at least 2.00.

C. REGISTRATION

1. A student pursuing a degree in SoSCAI may register full-time or part-time. A student who is in full-time employment may pursue a degree on a part-time basis only.

2. Students must register for courses at the beginning of the academic year. Time limits governing changes in registration are as outlined in the student handbooks for each Campus. A student is deemed to be registered for a course only after his/her financial obligations to the University have been fulfilled.

3. Registration for any course (except audited courses) automatically implies entry for the associated examinations. A student who fails to attend the examinations without having previously withdrawn from the course, or without having tendered evidence of illness at the time of the examinations, certified by a medical practitioner recognized by the University, will be deemed to have failed the course. Medical certificates must reach the Campus Registrar no later than seven (7) days after the date of the examination concerned.

4. (a) A student who has passed a course will not be permitted to re-register for that course.
   (b) Likewise, students may not register for Preliminary courses in a subject that overlaps substantially with any CAPE/GCE A-Level courses (or equivalent) previously passed.

SOFTWARE SPECIFICATIONS

All students accepted in the School of Science, Computing, and Artificial Intelligence must acquire a functioning laptop.

The following are the general minimum requirements for hardware and software for students enrolled in a degree programme in the School of Science, Computing, and Artificial Intelligence.

Some programmes might have specific or specialized requirements, check your relevant programme requirements.

HARDWARE REQUIREMENTS:

A portable laptop computer with the following specification is recommended.

- **Processor:** Intel Core i5 10th generation with 2.8GHz speed or better, Virtual box/VMware must be supported.
- **Memory (RAM):** 8 GB or more
- **Storage:** At least 512GB, Solid-State-Drive (SSD) is preferred
- **Display:** 13-inch or larger screen size with at least Full HD resolution
- **Graphics:** Integrated graphics card should suffice, but a dedicated graphics card is recommended for graphics-intensive tasks.

Special Minimum requirements for an Interdisciplinary degree in Data Science, Innovation Management and Computer Science.

- **Processor:** Intel Core i7 11th generation (2.5 Ghz) or better
- **RAM:** 16GB or more
- **Storage:** At least 512GB Solid-State-Drive (SSD)
- **Display:** 15-inch or larger screen size with at least Full HD resolution
- **Graphics:** Dedicated graphics card with at least 4GB VRAM (NVIDIA GTX or RTX series recommended)

D. PROGRESS THROUGH THE PROGRAMME

1. Students admitted into the four-year degree programme who have already obtained one CAPE/GCE A-level pass (or equivalent) in an approved science subject, may be permitted to register for up to nine (9) credits of Level 1 courses.

2. (a) Full-time Part I students are required to register for a minimum of twelve (12) credits from Faculty courses and Foundation courses, per semester. A student registering for less than twelve (12) credits will be deemed a part-time student.
   (b) In order to register for Level 2 courses, a student must normally pass a minimum of eighteen (18) credits in Level 1 School courses. At least twelve (12) of these credits must be from in-School courses.
   (c) A student must not register for less than two (2) courses in any one semester, except with the permission of the Director of Academic Affairs.
   (d) The normal load for a full-time student is fifteen (15) course credits per semester, plus one (1) Foundation course i.e.: 33 credits over Semester I & II.

3. 14. The maximum number of credits for which a student may register in any one semester is eighteen (18) credits if full-time, and eleven (11) credits, if part-time.

4. (a) Students must make a final declaration of their proposed major(s) and/or minor(s) by the end of the registration period of the semester in which they intend to graduate.
   (b) Students must graduate as soon as they have met the requirements for the degree for which they are registered.

E. EXAMINATIONS

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

2. 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 assessments of theoretical and/or practical work may contribute towards the final grade awarded in a course.

3. 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. Based on performance in the course's practical component, a candidate may, on the recommendation of the Department concerned, be exempted from the practical part of the examination.

4. A candidate who marginally fails the examination associated with a Preliminary or Level 1 course may, if recommended by the relevant Department, 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.

5. A finalist who marginally fails a course needed for graduation, having satisfied the Departmental requirements, may, at the discretion of the Faculty Board of Examiners, be offered a Supplementary Oral. Any candidate who satisfies the examiners in a Supplementary Oral will be given the minimum passing grade in the course. No more than two (2) Supplementary Orals may be gained. However, a third oral examination may be granted to final year students in circumstances when passing a single course is all that is required. A Supplemental Oral precludes the student requesting a Remark.

6. 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 coursework, the candidate may, on the recommendation of the relevant Department, be exempted from the coursework passed. If such a recommendation has been made, the candidate may apply to the Director of Academic Affairs for permission to take the examination without attending the course (Exam Only).

7. The Academic Board of a candidate's Campus on the recommendation of the Faculty Board concerned, may debar the candidate from writing the examination associated with a course if the candidate has not attended and/or performed satisfactorily in the course. The grade for such a candidate will be recorded as Absent Fail.

8. All international students whose first language is not English and who matriculated into the School of Science Computing and Artificial Intelligence with English as a Second Language (ESL) qualifications shall be exempted without credit from this requirement.

9. Students may opt not to take a UWI foreign language course and choose instead the self-directed learning path to foreign language competency. Those who do so must demonstrate competency to the satisfaction of The UWI that is at the Common European Framework of Reference for Language: Learning, Teaching, Assessment (CEFR) A1 or its equivalent in other systems.

10. Students who do not possess certification in a foreign language but might have pursued a foreign language may take a proficiency test to demonstrate their competence to the satisfaction of The UWI (i.e., CEFR A1 or its equivalent)

11. Students may fulfil this requirement at any time during their undergraduate programme.

PRELIMINARY COURSES

Students on a four-year path of their respective programmes will be required to complete preliminary courses.

SEMESTER I - *PRELIMINARY (6 CREDITS)*

COMP0001	Preliminary Computer Science I
MATH0100	Pre-Calculus

SEMESTER II - *PRELIMINARY (6 CREDITS)*

COMP0002	Preliminary Computer Science II
MATH0110	Calculus and Analytical Geometry

INTERDISCIPLINARY DEGREE IN DATA SCIENCE, INNOVATION MANAGEMENT & COMPUTER SCIENCE

LEVEL I

SEMESTER I

COMP1180	Mathematics for Computer Science I
FOUN1008	Introduction to Professional Writing
Or FOUN1006	Exposition for Academic Purposes
COMP1205	Computing I
ECON1001	Introduction to Microeconomics
DICS1011	Intro to Probability & Statistics

SEMESTER II

STAT1001	Statistics for Scientists
COMP1210	Computing II
ECON1002	Introduction to Macroeconomics
[FOUN****]	Foreign Language Course
FOUN1101	Caribbean Civilization

LEVEL 2

SEMESTER I

COMP2611	Data Structures
ECON2000	Intermediate Microeconomics I
ECON2002	Intermediate Macroeconomics I
COMP2225	Software Engineering
COMP3605	Introduction to Data Analytics
COMP2210	Mathematics for Computer Science II

SEMESTER II

INFO2604	Information Systems Security
ECON2001	Intermediate Microeconomics II
DICS2205	Machine Learning
DICS2250	Introduction to Optimization
COMP2245	Web Development Concepts, Tools, and Practices
DICS3955	Summer Internship (At a relevant private sector, public sector, or Governmental agency)

LEVEL 3

SEMESTER I

COMP3610	Big Data Analytics
ECON3049	Econometrics
MGMT3091	Creativity and Innovation Management for Entrepreneurship

DICS3645	Platform Economy Project Course
COMP3330	Database Management Systems I
DICS3015	Design & Management of Platform Economy

SEMESTER II

ECON3001	Industrial Economics
MGMT3089	Social Entrepreneurship for Sustainable Development
DICS3645	Platform Economy Project Course
DICS3105	Applied Computation Thinking & Data Science

** **Foreign Language (There is a 3-credit foreign language requirement for this academic programme.) Replaces the Law, Governance and Economy course [FOUN1301] since its content will be covered in this programme's "Professional Ethics & Law in Platform Economy)" [DICS3015].**

MINOR IN APPLIED DATA SCIENCE

LEVEL 1 PREREQUISITE

Introduction to Probability and Statistics [DICS1011] / Statistics for Scientists [STAT1001] / Introduction to Statistics [ECON1005]

LEVELS II AND III (15 CREDITS)

COMP2XXX	Programming for Data Science
COMP3605	Introduction to Data Analytics

AND at least 9 credits (including at least one Level III course) from:

COMP3XXX	Data Ethics, Privacy, and Security
COMP3XXX	Data Visualization
EDRS2202	Basic Data Analysis with the Computer
DICS2205	Machine Learning
COMP3610	Big Data Analytics

MAJOR IN COMPUTER SCIENCE

LEVEL I

COMP1170 Entrepreneurship for Computer Scientists
COMP1180 Mathematics for Computer Science I
COMP1205 Computing I
COMP1210 Computing II
COMP1215 UNIX

LEVEL II

COMP2210 Mathematics for Computer Science
COMP2220 Computer System Architecture
COMP2225 Software Engineering
COMP2232 Object-Oriented Programming Concepts
COMP2611 Data Structures

LEVEL III

COMP3310 Algorithms
COMP3320 Design Principles of Operating Systems
COMP3330 Database Management Systems I

AND at least Six (6) Credits (including at least one Level III course) from Computer Science Elective Courses.

Computer Science Elective Courses:

COMP2235 Networks I
COMP2245 Web Development Concepts, Tools, and Practices
COMP2410 Computing in the Digital Age
COMP2415 Information Technology Engineering
COMP2950 Computer Science Elective
COMP3360 Networks II
COMP3365 Networks III
COMP3450 Fundamentals of Artificial Intelligence
COMP3370 Software Engineering On A Large Scale
COMP3375 Software Testing and Quality
COMP3385 Framework Design For Advanced Web Development
COMP3412 Scalable Enterprise Web Applications
COMP3415 Database Management Systems II
COMP3420 Computer Graphics
COMP3425 Mobile Applications for iOS Devices
COMP3435 User Interface Design
COMP3440 E-Commerce
COMP3445 Computer Information Systems
COMP3490 Research Project in Computer Science
COMP3495 Major Research Project in Computer Science (6 Credits)

COMP3499 Group Research Project in Computer Science
COMP3955 Computer Science Internship

AND 9 CREDITS: FOUNDATION COURSES

FOUN1101 Caribbean Civilization
Foreign Language Proficiency Course
AND
FOUN1006 Exposition For Academic Purposes
OR
FOUN1008 An Introduction to Professional Writing

***Students exempted from the foreign language requirement will be required to do FOUN1301 Law, Governance, Economy, and Society**

DOUBLE MAJOR IN COMPUTER SCIENCE:

LEVEL I

COMP1170	Entrepreneurship for Computer Scientists
COMP1180	Mathematics for Computer Science I
COMP1205	Computing I
COMP1210	Computing II
COMP1215	UNIX

LEVEL II

COMP2210	Mathematics for Computer Science II
COMP2220	Computer System Architecture
COMP2225	Software Engineering
COMP2232	Object-Oriented Programming Concepts
COMP2235	Networks I
COMP2611	Data Structures

LEVEL III

COMP3310	Algorithms
COMP3320	Design Principles of Operating Systems
COMP3330	Database Management Systems I
COMP3360	Networks II

AND

COMP3490 Research Project in Computer Science

AND

Three (3) Level III credits from Computer Science

OR

COMP3495 Major Research Project in Computer Science (6 Credits)

OR

COMP3499 Group Research Project in Computer Science

AND

Three (3) Level III credits from Computer Science

AND at least Twenty-Four (24) Credits from Computer Science Elective Courses:

COMP2245	Web Development Concepts, Tools, and Practices
COMP2410	Computing in the Digital Age
COMP2415	Information Technology Engineering
COMP2950	Computer Science Elective
COMP3365	Networks III
COMP3450	Fundamentals of Artificial Intelligence
COMP3370	Software Engineering On A Large Scale
COMP3375	Software Testing and Quality
COMP3385	Framework Design For Advanced Web Development
COMP3412	Scalable Enterprise Web Applications
COMP3415	Database Management Systems II
COMP3420	Computer Graphics
COMP3425	Mobile Applications for iOS Devices
COMP3435	User-Interface Design
COMP3440	E-Commerce
COMP3445	Computer Information Systems
COMP3955	Computer Science Internship

MINOR IN COMPUTER SCIENCE [FIFTEEN (15) CREDITS]

At Least Nine (9) Credits From:

COMP2210	Mathematics for Computer Science II
COMP2220	Computer System Architecture
COMP2225	Software Engineering
COMP2232	Object-Oriented Programming Concepts
COMP2611	Data Structures
COMP3310	Algorithms
COMP3320	Design Principles of Operating Systems
COMP3330	Database Management Systems I

AND at Most Six (6) Credits from Computer Science Elective Courses:

COMP2235	Networks I
COMP2245	Web Development Concepts, Tools, and Practices
COMP2410	Computing in the Digital Age
COMP2415	Information Technology Engineering
COMP2950	Computer Science Elective
COMP3360	Networks II
COMP3365	Networks III
COMP3450	Fundamentals of Artificial Intelligence
COMP3370	Software Engineering On A Large Scale
COMP3375	Software Testing and Quality
COMP3385	Framework Design For Advanced Web Development
COMP3412	Scalable Enterprise Web Applications
COMP3415	Database Management Systems II
COMP3420	Computer Graphics
COMP3425	Mobile Applications for iOS Devices
COMP3435	User Interface Design
COMP3440	E-Commerce
COMP3445	Computer Information Systems
COMP3490	Research Project in Computer Science
COMP3495	Major Research Project in Computer Science (6 Credits)
COMP3499	Group Research Project in Computer Science

MAJOR IN INFORMATION TECHNOLOGY

LEVEL I

COMP1170	Entrepreneurship for Computer Scientists
COMP1180	Mathematics for Computer Science I
COMP1205	Computing I
COMP1210	Computing II
COMP1215	UNIX

LEVEL II

COMP2225	Software Engineering
COMP2232	Object-Oriented Programming Concepts
COMP2410	Computing in the Digital Age
COMP2415	Information Technology Engineering
COMP2611	Data Structures

LEVEL III

COMP3330	Database Management Systems I
COMP3415	Database Management Systems II
COMP3435	User-Interface Design

AND at least Six (6) Credits (including at least one Level III course) from Information Technology Elective Courses:

COMP2210	Mathematics for Computer Science II
COMP2220	Computer System Architecture
COMP2235	Networks I
COMP2245	Web Development Concepts, Tools, and Practices
COMP2950	Computer Science Elective
COMP3310	Algorithms
COMP3320	Design Principles of Operating Systems
COMP3360	Networks II
COMP3365	Networks III
COMP3450	Fundamentals of Artificial Intelligence
COMP3370	Software Engineering On A Large Scale
COMP3375	Software Testing and Quality
COMP3385	Framework Design For Advanced Web Development
COMP3412	Scalable Enterprise Web Applications
COMP3420	Computer Graphics
COMP3425	Mobile Applications for iOS Devices
COMP3440	E-Commerce
COMP3445	Computer Information Systems
COMP3490	Research Project in Computer Science

COMP3495 Major Research Project in Computer Science (6 Credits)
COMP3499 Group Research Project in Computer Science
COMP3955 Computer Science Internship

AND 9 CREDITS: FOUNDATION COURSES
FOUN1101 Caribbean Civilization
Foreign Language Proficiency Course
AND
FOUN1006 Exposition For Academic Purposes
OR
FOUN1008 An Introduction to Professional Writing
***Students exempted from the foreign language requirement will be required to do FOUN1301 Law, Governance, Economy, and Society**

MINOR IN INFORMATION TECHNOLOGY [FIFTEEN (15) CREDITS]:

At Least Nine (9) Credits From:

COMP2225 Software Engineering
COMP2232 Object-Oriented Programming Concepts
COMP2410 Computing in the Digital Age
COMP2415 Information Technology Engineering
COMP2611 Data Structures
COMP3330 Database Management Systems I
COMP3435 User Interface Design
COMP3415 Database Management Systems II

AND At Most Six (6) Credits From:

COMP2210 Mathematics for Computer Science II
COMP2220 Computer System Architecture
COMP2235 Networks I
COMP2245 Web Development Concepts, Tools, and Practices
COMP2950 Computer Science Elective
COMP3310 Algorithms
COMP3320 Design Principles of Operating Systems
COMP3360 Networks II
COMP3365 Networks III
COMP3450 Fundamentals of Artificial Intelligence
COMP3370 Software Engineering On A Large Scale
COMP3375 Software Testing and Quality
COMP3385 Framework Design For Advanced Web Development
COMP3412 Scalable Enterprise Web Applications
COMP3420 Computer Graphics
COMP3425 Mobile Applications for iOS Devices
COMP3440 E-Commerce
COMP3445 Computer Information Systems
COMP3490 Research Project in Computer Science
COMP3495 Major Research Project in Computer Science (6 Credits)
COMP3499 Group Research Project in Computer Science

PROGRAMMES IN COLLABORATION WITH THE SCHOOL OF BUSINESS MANAGEMENT

BSC COMPUTER SCIENCE AND ACCOUNTING

LEVEL I (33 CREDITS)

COMP1170	Entrepreneurship for Computer Scientists
COMP1180	Mathematics for Computer Science I
COMP1205	Computing I
COMP1210	Computing II
COMP1215	UNIX
MATH1230	Introductory Applied Statistics 1
ACCT1002	Introduction to Financial Accounting
ACCT1003	Cost and Management Accounting I
ECON1001	Introduction to Microeconomics
ECON1002	Introduction to Macroeconomics
MGMT1001	Introduction to Management

LEVELS II & III (60 CREDITS)

LEVEL II (27 CREDITS)

COMP2210	Mathematics for Computer Science II
COMP2220	Computer System Architecture
COMP2225	Software Engineering
COMP2232	Object-Oriented Programming Concepts
COMP2611	Data Structures
ACCT2014	Financial Accounting I
ACCT2015	Financial Accounting II
ACCT2017	Management Accounting I
MGMT2023	Financial Management I

AND Six (6) Credits from Level II Accounting Courses

LEVEL III (15 CREDITS)

COMP3310	Algorithms
COMP3320	Design Principles of Operating Systems
COMP3330	Database Management Systems I
ACCT3043	Auditing I

AND Either

ACCT3040	Accounting Theory

OR

ACCT3041	Advanced Financial Accounting

AND at least Six (6) Credits (including at least one Level III course) from Computer Science Elective Courses

AND Six (6) Credits from Level III Accounting Courses

AND 9 CREDITS: FOUNDATION COURSES

FOUN1006	Exposition For Academic Purposes

OR

FOUN1008	An Introduction to Professional Writing

AND

FOUN1101	Caribbean Civilization

Foreign Language Proficiency Course

FOUN1301	Law, Economy, Governance and Society

***Students exempted from the foreign language requirement will be required to do FOUN1301 Law, Governance, Economy, and Society**

BSC COMPUTER SCIENCE WITH ACCOUNTING

LEVEL I (33 CREDITS)

COMP1170	Entrepreneurship for Computer Scientists
COMP1180	Mathematics for Computer Science I
COMP1205	Computing I
COMP1210	Computing II
COMP1215	UNIX
MATH1230	Introductory Applied Statistics 1
ACCT1002	Introduction to Financial Accounting
ACCT1003	Cost & Management Accounting I
ECON1001	Introduction to Microeconomics
ECON1002	Introduction to Macroeconomics
MGMT1001	Introduction to Management

LEVELS II & III (60 CREDITS)

LEVEL II (24 CREDIT`S)

COMP2210	Mathematics for Computer Science II
COMP2220	Computer System Architecture
COMP2225	Software Engineering
COMP2232	Object-Oriented Programming Concepts
COMP2611	Data Structures
ACCT2014	Financial Accounting I
ACCT2015	Financial Accounting II
ACCT2017	Management Accounting I

LEVEL III (15 CREDITS)

COMP3310	Algorithms

COMP3320 Design Principles of Operating Systems
COMP3330 Database Management Systems I
ACCT3043 Auditing I
AND
Either ACCT3040 Accounting Theory
OR
ACCT3041 Advanced Financial Accounting
AND at least Six (6) Credits (including at least one Level III course) from Computer Science Elective Courses

AND Fifteen (15) Level II/III Credits from any Faculty. Three (3) of these credits can come from a Co-Curricular course.
AND 9 CREDITS: FOUNDATION COURSES
FOUN1006 Exposition For Academic Purposes
OR
FOUN1008 An Introduction to Professional Writing
AND
FOUN1101 Caribbean Civilization
Foreign Language Proficiency Course
FOUN1301 Law, Economy, Governance and Society
***Students exempted from the foreign language requirement will be required to do FOUN1301 Law, Governance, Economy, and Society**

BSC COMPUTER SCIENCE AND ECONOMICS

LEVEL I (24 CREDITS)

COMP1170 Entrepreneurship for Computer Scientists
COMP1180 Mathematics for Computer Science I
COMP1205 Computing I
COMP1210 Computing II
COMP1215 UNIX
MATH1230 Introductory Applied Statistics 1
ECON1001 Introduction to Microeconomics
ECON1002 Introduction to Macroeconomics

LEVELS II & III (60 CREDITS)

LEVEL II (30 CREDITS)

COMP2210 Mathematics for Computer Science II
COMP2220 Computer System Architecture
COMP2225 Software Engineering
COMP2232 Object-Oriented Programming Concepts
COMP2611 Data Structures
ECON2000 Intermediate Microeconomics I

ECON2001 Intermediate Microeconomics II
ECON2002 Intermediate Macroeconomics I
ECON2003 Intermediate Macroeconomics II
ECON2026 Statistical Methods II

LEVEL III (12 CREDITS)

COMP3310 Algorithms
COMP3320 Design Principles of Operating Systems
COMP3330 Database Management Systems I
ECON3049 Econometrics I
AND at least Six (6) Credits (including at least one Level III course) from Computer Science Elective Courses

AND Four Level II/III ECON courses (12 Credits)

AND 9 CREDITS: FOUNDATION COURSES
FOUN1006 Exposition For Academic Purposes
OR
FOUN1008 An Introduction to Professional Writing
AND
FOUN1101 Caribbean Civilization
Foreign Language Proficiency Course
FOUN1301 Law, Economy, Governance and Society
***Students exempted from the foreign language requirement will be required to do FOUN1301 Law, Governance, Economy, and Society**

BSC COMPUTER SCIENCE WITH ECONOMICS

LEVEL I (24 CREDITS)

COMP1170 Entrepreneurship for Computer Scientists
COMP1180 Mathematics for Computer Science I
COMP1205 Computing I
COMP1210 Computing II
COMP1215 UNIX
MATH1230 Introductory Applied Statistics 1
ECON1001 Introduction to Microeconomics
ECON1002 Introduction to Macroeconomics

LEVELS II & III (60 CREDITS)

LEVEL II (27 CREDITS)

COMP2210 Mathematics for Computer Science II
COMP2220 Computer System Architecture
COMP2225 Software Engineering

COMP2232 Object-Oriented Programming Concepts
COMP2611 Data Structures
ECON2000 Intermediate Microeconomics I
ECON2001 Intermediate Microeconomics II
ECON2002 Intermediate Macroeconomics I
ECON2003 Intermediate Macroeconomics II

AND One Level II/III ECON course (3 Credits)

LEVEL III (9 CREDITS)

COMP3310 Algorithms
COMP3320 Design Principles of Operating Systems
COMP3330 Database Management Systems I

AND at least Six (6) Credits (including at least one Level III course) from Computer Science Elective Courses

AND Fifteen (15) Level II/III credits from any Faculty. Three (3) of these credits can come from a Co-Curricular Course.

AND 9 CREDITS: FOUNDATION COURSES

FOUN1006 Exposition For Academic Purposes
OR
FOUN1008 An Introduction to Professional Writing
AND
FOUN1101 Caribbean Civilization
Foreign Language Proficiency Course
FOUN1301 Law, Economy, Governance and Society

***Students exempted from the foreign language requirement will be required to do FOUN1301 Law, Governance, Economy, and Society**

BSC COMPUTER SCIENCE AND MANAGEMENT

LEVEL I (33 CREDITS)

COMP1170 Entrepreneurship for Computer Scientists
COMP1180 Mathematics for Computer Science I
COMP1205 Computing I
COMP1210 Computing II
COMP1215 UNIX
MATH1230 Introductory Applied Statistics 1
ACCT1002 Introduction to Financial Accounting
ACCT1003 Cost and Management Accounting I
ECON1001 Introduction to Microeconomics
ECON1002 Introduction to Macroeconomics
MGMT1001 Introduction to Management

LEVELS II & III (60 CREDITS)

LEVEL II (33 CREDITS)

COMP2210 Mathematics for Computer Science II
COMP2220 Computer System Architecture
COMP2225 Software Engineering
COMP2232 Object-Oriented Programming Concepts
COMP2611 Data Structures
MKTG2001 Principles of Marketing
MGMT2006 Information Systems I
MGMT2008 Organizational Behaviour
MGMT2020 Managerial Economics
MGMT2023 Financial Management I
MGMT2026 Production & Operations Management

LEVEL III (12 CREDITS)

COMP3310 Algorithms
COMP3320 Design Principles of Operating Systems
COMP3330 Database Management Systems I
MGMT3017 Human Resources Management

AND at least Six (6) Credits (including at least one Level III course) from Computer Science Elective Courses

AND Nine (9) Credits from LEVEL III Management Courses

AND 9 CREDITS: FOUNDATION COURSES

FOUN1006 Exposition For Academic Purposes
OR
FOUN1008 An Introduction to Professional Writing
AND
FOUN1101 Caribbean Civilization
Foreign Language Proficiency Course
FOUN1301 Law, Economy, Governance and Society

***Students exempted from the foreign language requirement will be required to do FOUN1301 Law, Governance, Economy, and Society**

BSC COMPUTER SCIENCE WITH MANAGEMENT

LEVEL I (33 CREDITS)

COMP1170	Entrepreneurship for Computer Scientists
COMP1180	Mathematics for Computer Science I
COMP1205	Computing I
COMP1210	Computing II
COMP1215	UNIX
MATH1230	Introductory Applied Statistics 1
ACCT1002	Introduction to Financial Accounting
ACCT1003	Cost & Management Accounting I
ECON1001	Introduction to Microeconomics
ECON1002	Introduction to Macroeconomics
MGMT1001	Introduction to Management

LEVELS II & III (60 CREDITS)

LEVEL II (27 CREDITS)

COMP2210	Mathematics for Computer Science II
COMP2220	Computer System Architecture
COMP2225	Software Engineering
COMP2232	Object-Oriented Programming Concepts
COMP2611	Data Structures
MKTG2001	Principles of Marketing
MGMT2006	Management Information Systems I
MGMT2008	Organizational Behaviour
MGMT2023	Financial Management I

LEVEL III (12 CREDITS)

COMP3310	Algorithms
COMP3320	Design Principles of Operating Systems
COMP3330	Database Management Systems I
MGMT3017	Human Resources Management

AND at least Six (6) Credits (including at least one Level III course) from Computer Science Elective Courses

AND Fifteen (15) Level II/III credits from any Faculty. Three (3) of these credits can come from a Co-Curricular course.

AND 9 CREDITS: FOUNDATION COURSES

FOUN1006 Exposition For Academic Purposes

OR

FOUN1008 An Introduction to Professional Writing

AND

FOUN1101 Caribbean Civilization

Foreign Language Proficiency Course

FOUN1301 Law, Economy, Governance and Society

***Students exempted from the foreign language requirement will be required to do FOUN1301 Law, Governance, Economy, and Society**

PROGRAMME IN COLLABORATION WITH THE SCHOOL OF HUMANITIES AND EDUCATION

BSC COMPUTER SCIENCE WITH EDUCATION

LEVEL I (24 CREDITS)

COMP1170 Entrepreneurship for Computer Scientists
COMP1180 Mathematics for Computer Science I
COMP1205 Computing I
COMP1210 Computing II
COMP1215 UNIX
EDPS1001 Introduction to Human Development
AND
6 Level I Credits from any Faculty

LEVELS II & III (60 CREDITS)

LEVEL II (21 CREDITS)

COMP2210 Mathematics for Computer Science II
COMP2611 Data Structures
COMP2220 Computer System Architecture
COMP2225 Software Engineering
COMP2232 Object-Oriented Programming Concepts
EDCU2101 Introduction to Curriculum, Theory, Planning & Practice
EDRS2201 Introduction to Research Methods in Education
AND 3 Credits (one course) from:
EDMA2111 The Structure and Nature of Mathematics
EDSC2110 The Structure and Nature of Science

LEVEL III (12 CREDITS)

COMP3310 Algorithms
COMP3320 Design Principles of Operating Systems
COMP3330 Database Management Systems I
EDSO3102 The Social Context of Education
AND at least Six (6) Credits (including at least one Level III course) from Computer Science Elective Courses

AND 3 Credits (one course) from:
EDPH2016 Philosophy of Education
EDME2211 Testing, Measurement & Evaluation I

EDEA2304 Introduction to Educational Administration
EDSE2924 Introduction to Special Education
EDTK3304 Media & Technology in Education
EDTE3404 Issues in Teacher Education
AND Fifteen (15) Levels II and III credits from any Faculty. Three (3) of these credits can come from a Co-Curricular course.

AND 9 CREDITS: FOUNDATION COURSES
FOUN1006 Exposition For Academic Purposes
OR
FOUN1008 An Introduction to Professional Writing
AND
FOUN1101 Caribbean Civilization
Foreign Language Proficiency Course
FOUN1301 Law, Economy, Governance and Society
***Students exempted from the foreign language requirement will be required to do FOUN1301 Law, Governance, Economy, and Society**

SOSCAI DEGREE PROGRAMMES COURSE DETAILS

PRELIMINARY COURSES

COMP0001 - PRELIMINARY COMPUTER SCIENCE I (6 CREDITS)

Prerequisites: None

Syllabus: Fundamentals of Information Technology; Relating IT and other Computing disciplines. Distinguish between data and information; Fundamentals of Computer Architecture The components of computer-based systems; Functional components of a computer system (characteristics, performance, and interactions Problem Solving with Computers; the problem-solving process; the development and use of algorithms.

Teaching: Four (4) lectures, One (1) tutorial, One (1) 2-hour laboratory per week

Method of Examination:

In-course Test(s)/Assignment(s)	30%
Laboratory Exercises	20%
Final Theory Examination (2 hrs.)	50%

COMP0002 - PRELIMINARY COMPUTER SCIENCE I (6 CREDITS)

Prerequisites: None

Syllabus: Data structures; Using abstract data types (ADTs); Basic algorithms for sorting and Searching; Software engineering; The software development life cycle Methods, processes, tools and techniques used in software engineering Operating systems and networks; Functions of operating systems Incorporation of networking technology and applications in operating systems Use of information technology tools; Using productivity tools to solve real-life problems Presenting information in an appropriate manner.

Teaching: Four (4) lectures, One (1) tutorial, One (1) 2-hour laboratory per week

Method of Examination:

In-course Test(s)/Assignment(s)	30%
Laboratory Exercises	20%
Final Theory Examination (2 hrs.)	50%

It is a requirement of the discipline that, to pass any Computer Science course, students must pass both the Coursework and the Final exam.

PRELIMINARY MATHEMATICS COURSES

MATH0100 - PRE-CALCULUS (6 CREDITS)

Prerequisite: Caribbean Secondary Education Certificate (CSEC) General Proficiency course in Mathematics, AND / OR the CSEC General Proficiency course in Additional Mathematics, OR equivalent.

Syllabus: Propositions, logical connectives, truth tables and logical equivalence, Properties of binary operations, inequalities, methods of proof and remainder theorem, Exponential and logarithmic functions, indices, laws of logarithms and inverse functions, Domain, range, injective, surjective, equations and

inequalities involving simple rational functions and modulus function, Trigonometric functions, identities and equations, Equations of tangents and normal to circles, points of intersection of two curves, parametric representation and Cartesian equation of a curve, Three dimensional representation of vectors, addition and scalar product of vectors, position and unit vectors, length and direction of vector, vector equations of lines and planes, Concept of limits, limit theorems, continuity and intermediate value theorem, Derivative as limit, gradient, rates of change, differentiation from first principles, product and quotient rules, second derivatives and curve sketching, Linearity law of integration, indefinite and definite integrals, application of integration, methods of integration and solutions of simple first order differential equations by integration. Propositions, logical connectives, truth tables and logical equivalence, Properties of binary operations, inequalities, methods of proof and remainder theorem, Exponential and logarithmic functions, indices, laws of logarithms and inverse functions, Domain, range, injective, surjective, equations and inequalities involving simple rational functions and modulus function, Trigonometric functions, identities and equations, Equations of tangents and normal to circles, points of intersection of two curves, parametric representation and Cartesian equation of a curve, Three-dimensional representation of vectors, addition and scalar product of vectors, position and unit vectors, length and direction of vector ,vector equations of lines and planes, Concept of limits, limit theorems, continuity and intermediate value theorem, Derivative as limit, gradient, rates of change, differentiation from first principles, product and quotient rules, second derivatives and curve sketching, Linearity law of integration, indefinite and definite integrals, application of integration, methods of integration and solutions of simple first order differential equations by integration.

Teaching: Five (5) lectures and one tutorial per week.

Method of Examination:

Final Theory Examination (3 hours)	50%
In-course Tests/Assignments	50%

To pass this course, Students MUST PASS BOTH the course work component and final examination.

MATH0110 - CALCULUS AND ANALYTICAL GEOMETRY (6 CREDITS)

Prerequisite: Caribbean Secondary Education Certificate (CSEC) General Proficiency course in Mathematic, and / or the CSEC General Proficiency course in Additional Mathematics, or equivalent.

Syllabus: Express complex numbers in the form $a + bi$, where a and b are real numbers. Add, subtract, multiply and divide complex numbers. Interpret modulus and argument of a complex number in Argand diagram. Find the derivative of $e^{f(x)}$ and ln $f(x)$, where $f(x)$ is a differentiable function of x. Find first and second derivatives of combinations of polynomials, trigonometric, exponential and logarithmic functions. Apply the chain rule to obtain gradients and equations of tangents and normal to curves given in parametric form. Use the concept of implicit differentiation. Integrate an improper rational function, exponential function and logarithmic function. Find integrals of the form $\int f'(x)/f(x)$ and use substitutions to integrate functions (the substitutions will be given in non-

trivial cases). Derive and use reduction formulae to obtain integrals which may involve integration by parts. Define the concept of a sequence as a function from the positive integers to the real numbers. Describe the behavior of convergent and divergent sequences by simple examples. Define a series as the sum of n terms of a sequence. Define the mth partial sum as the sum of first m terms of the sequence. Use the Maclaurin and Taylor theorem for the expansion of series. Expand $(a+b)n$, for $n\varepsilon\mathbb{Q}$ in terms of Pascal Numbers $(n\ r)$. Use linear interpolation to find an approximation for a root in a stated interval. Use the Newton-Raphson method to approximate roots. Find the number of ways of combining and permuting different objects. Define and calculate the probability of an event occurring by using simple laws. Invert a non-singular matrix of order n for $n = 2, 3$. Reduce a system of linear equations to echelon form. Determine whether a system of linear equations is consistent or inconsistent. Solve a differential equations of the form, $dy/dx + ky = f(x)$, where k is a constant or function of x and f is a function. Solve second order ordinary differential equations with constant coefficients and given boundary conditions.

Teaching: Five (5) lectures and one tutorial per week.

Method of Examination:

Final Theory Examination (3 hours)	50%
In-class Tests/Assignments	50%

To pass this course, Students MUST PASS BOTH the coursework component and final examination.

LEVEL I DATA SCIENCE COURSES

DICS1011 - INTRODUCTION TO PROBABILITY & STATISTICS (3 CREDITS)

Prerequisites: None

Anti-requisite: None

Syllabus: Probability: (uncertain world, perfect knowledge of the uncertainty). Counting. Random variables, distributions, quantiles, mean-variance. Conditional probability, Bayes' theorem. Covariance, correlation, independence. Sampling Distributions and Central limit theorem. Statistics: Bayesian inference with known priors, and probability intervals. Conjugate priors. Bayesian inference with unknown priors. Data Description, Sources and Collection of Data. Data Representation Using Graphical Methods. Estimation of population parameters and confidence intervals for means, variances and proportions. Hypothesis (significance tests). Correlation and Linear regression.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	65%
Final Theory Examination	35%

ECON1001 - INTRODUCTION TO MICROECONOMICS

Prerequisite: None

Description: In this course, students will examine how economic tools can be used to understand and predict the behaviour of individual economic agents. The course provides students with a basic overview of the key microeconomic

topics including individual consumption behaviour, production, cost, price setting by firms as well as the notion of market failure. The course allows students to develop an understanding of how to use economic tools and models.

STAT1001 - STATISTICS FOR SCIENTISTS

Prerequisite: CAPE Mathematics or its Equivalent

Anti-requisite: None

Syllabus: Summarising and Interpreting Data - Picturing Distributions with Graphs, Describing distributions with numbers. Random Variables. Probability and Probability Distribution arising from a Binomial, Poisson, or Normal distribution. Elementary ideas of sampling methods. Sampling and Estimation - Sampling Distribution & Central Limit Theorem. Confidence Intervals – for a population mean, a population proportion, difference in two population means and difference in two population proportions. Hypothesis Testing – for a population mean, a population proportion, difference in two population means and a difference in two population proportions. Hypothesis Testing via the Rejection region approach and P-value approach. Introduction to Correlation & Simple Linear Regression - Scatter plots, Correlations, Least-Squares Regression.

Teaching: Two (2) hours of lectures and 1-hour tutorial per week.

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination 60%

ECON1002 - INTRODUCTION TO MACROECONOMICS

Prerequisite: None

Description: The course examines the composition of the economy's key macroeconomic variables and the relationships which exist among such variables. Throughout the course, variables such as national income, economic growth, money demand, and money supply, and inflation are examined. In addition, the course would allow students to develop an understanding of how certain macroeconomic variables are measured and how such measurements can be interpreted.

ECON2002 - INTERMEDIATE MACROECONOMICS I

Prerequisites: ECON1001 Introduction to Microeconomics AND ECON1002 Introduction to Macroeconomics

Description: The course introduces students to the macroeconomic analysis of aggregate economic measures. It teaches various macroeconomic theories used to understand the economy's performance. Students will become familiar with manipulating the models to solve macroeconomic problems such as recessions, trade deficits, budget deficits, and unemployment as well as develop skills in policy advice informed by the models.

ECON2000 - INTERMEDIATE MICROECONOMICS I

Prerequisites: ECON1001: Introduction to Microeconomics I, ECON1002: Introduction to Macroeconomics I AND ECON1004: Mathematics for Social Sciences II OR MATH1190: Calculus A

Description: The course introduces the fundamental concepts of microeconomics. Based

on theory, it investigates the behaviour of consumers and firms in a perfectly competitive environment. By studying the interaction of producers and consumers, the course will shed light on how industries and markets operate and evolve, and how they are affected by changes in policies and economic conditions. Students will be exposed to the mathematical concepts that are widely employed in microeconomics and other fields of economics.

MGMT2224 - INTRODUCTION TO ENTREPRENEURSHIP

Prerequisite: MGMT1001 Introduction to Management

Description: On average 70% of all new business ventures fail within the first year of operation. Ignorance of and failure to apply entrepreneurial principles and practices have been identified as significant contributors to this situation. If this trend is to be reversed it is imperative that potential entrepreneurs adopt an entrepreneurial mindset and apply the theory-based practice in their new venture development process. This course focuses on the thinking involved in converting the idea into a viable business opportunity and the strategies for developing a product/service that satisfies customer needs better than existing solutions.

LEVEL II DATA SCIENCE COURSES

COMP3605 - INTRODUCTION TO DATA ANALYTICS

Prerequisite: STAT1001 – Statistics for Scientists

Anti-requisite: None

Syllabus: Data Preprocessing (Nominal, Binary, Ordinal and Numeric Attributes; data cleaning techniques and Data Transformation), Association and Correlations (association rules, market basket analysis, Apriori algorithm, Association and Correlation analysis), Classification (supervised learning techniques, classification techniques, C4.5 decision tree, Naive Bayesian classification), Cluster Analysis (unsupervised learning, cluster analysis and clustering algorithms, K-Means algorithm, vector quantization and compare its performance and accuracy with the K-Means algorithm, Evaluate the performance and accuracy of clustering methods), Outlier Detection and Support Vector Machines (dot kernel SVM (Support Vector Machine) for classification, SVMs for regression analysis)

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

ECON2001 - INTERMEDIATE MICROECONOMICS II

Prerequisite: ECON2000 Intermediate Microeconomics I

Description: This course deepens the understanding of basic microeconomics concepts and provides tools of analysis that allow students to blend microeconomic theory with practical relevance to economic problems. It focuses on the economic behaviour of firms in different market structures, acquainting students with the techniques that allow firms to optimize and enable economists to examine and predict the outcome of policies on firms in different market structures. In addition, it covers the analysis of factor markets and examines the conditions governing the achievement of a

general equilibrium in an economy. In addition, some attention is also paid to non-collusive oligopoly, Cournot and Stackelberg equilibria, pricing, price leadership, Pareto Optimality Welfare, techniques of project analysis, and the use of investment criteria for capital budgeting.

DICS2205 - MACHINE LEARNING

Prerequisite: STAT1001 – Statistics for Scientists, COMP1210 – Computing II

Anti-requisite: None

Syllabus: Introduction, linear classification, perceptron update rule. Perceptron convergence, generalization. Maximum margin classification. Classification errors, regularization, logistic regression. Linear regression, estimator bias and variance, active learning. Active learning (cont.), non-linear predictions, kernals. Kernal regression, kernels. Support vector machine (SVM) and kernels, kernel optimization. Model selection. Model Selection criteria. Description length, feature selection. Combining classifiers, boosting. Boosting, margin, and complexity. Margin and generalization, mixture models. Mixtures and the expectation maximization (EM) algorithm. EM, regularization, clustering. Clustering. Spectral clustering, Markov models. Hidden Markov models. Bayesian networks. Learning Bayesian networks. Probabilistic inference. Current problems in machine learning.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

DICS2250 - INTRODUCTION TO OPTIMIZATION

Prerequisites: COMP1180 – Mathematics for Computer Science I
COMP2210- Mathematics for Computer Science II

Anti-requisite: None

Syllabus: Problem solving with mathematical models (Optimization and the Operations Research Process. System Boundaries, Sensitivity Analysis, Tractability, and Validity. Descriptive Models and Simulation. Numerical Search and Exact Versus Heuristic Solutions. Deterministic vs Stochastic models). Deterministic optimization models (Decision Variables, Constraints, and Objective Functions. Graphic Solution and Optimization Outcomes. Linear and non-linear programs. Discrete and integer programs. Multi-objective optimization models). Improving Search. Linear Programming. Integer and heuristic programming. Multi-objective optimization and goal programming. Shortest path and discrete dynamic programming. Network flows and graphs. Complexity Analysis.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

INFO2604 - INFORMATION SYSTEMS SECURITY

Prerequisites: COMP1210 Computing II

Syllabus: Human Factors and Security. Biometric authentication (camera, voice).

Use various authentication strategies such as passwords biometrics, cryptography primitives, authentication devices, token-based authentication, and multi-factor authentication. Single Sign-on systems. Attacks, Threats, and Vulnerabilities. Categorising of countermeasures (technical vs. administrative, and preventative vs. detective vs. corrective). Discussing the typical cyber-attack phases (Reconnaissance, Scanning, Gaining Access, Maintaining Access, Covering Tracks). Principles of Secure Design. Least Privilege and isolation (cross-reference OS/Security and Protection/ Policy/Mechanism Separation. End-to-end security (cross-reference SF/ Reliability through Redundancy/ How errors increase the longer Use of vetted security components. Economy of mechanism (reducing trusted computing base, minimize attack surface) (cross-reference). Security composability. Prevention, detection, and deterrence (cross-reference SF/Reliability through Redundancy/Distinction. Security goals and principles of least privilege and separation of privilege. Defensive programming. Input validation and data sanitisation (cross-reference SDF/ Development Methods/ Program Correctness). Correct handling of exceptions and unexpected behaviours (cross-reference SDF/ Development). Explore the following Application Attacks: Input/Output Validation, Exception Handling, Sign-On, Access Control, Library Linking, Buffer Overflow, SQU Injection, Session High jacking, Cross Site Scripting and Directory Traversal. Use input validation and data sanitasation as countermeasures for application attacks. Network Security: Defense mechanism and countermeasures (e.g., network monitoring, intrusion detection, firewalls). Fundamentals of Wireless Security Protocols (WEP, WPA). Cryptography: Basic Cryptography Terminology covering notions pertaining to the difference (communication) partners. Cipher types (e.g., Caesar cipher, affine cipher) together with typical attack methods such as frequency. Public Key Infrastructure support for digital signature encryption and its challenges. Use Public Key Cryptography to implement key distribution and management techniques (Public Key Infrastructures, Kerberos, x.509 certificates, PGP certificates, Digital Signatures. Fundamental of Cryptography. Introduction to various symmetric encryption/decryption algorithms (Caesar, Affine, Rail fence, Vigenère, DES, AES).

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	50%
Final Theory Examination	50%

COMP2XXX - PROGRAMMING FOR DATA SCIENCE (3 CREDITS)

Prerequisites: CXC Mathematics Grade II / Equivalent.

Co-requisites: None

Syllabus: Introduction to programming (Writing a simple program- computational thinking and formalism, Reading input, variables, named constants. Assignment statements and assignment expressions, Numeric data types, Evaluating expressions and operator precedence, Assignment operators, increment and decrement operators, and Software development process.) Control structures (sequences, selection), (Boolean data types, if Statements, Logical operators and Conditional operators.) Control structures

(Repetition / Loops), (The while loop and do while loop, Loop design strategies, For loop). Functions. Strings & Mathematical functions (Common mathematical functions, Character data type and operations, string library). Working with Data Libraries (Working with Raw Data, Data Preparation and Cleaning, Basic DataSets-Vectors, List. Data Manipulation – Dataframes/ Matrix, Working with Multiple data types,Visualization). Files, databases, and UI (Reading data from a file, Sending output to a file, Public Data, Structured and Unstructured).

Teaching: Two (2) hours of lectures, two (2) hours of labs, and one (1) hour of tutorial per week.

Method of Examination:

In-course Test(s)/Assignment(s)	60%
Final Theory Examination	40%

LEVEL III DATA SCIENCE COURSES

COMP3XXX - DATA ETHICS, PRIVACY & SECURITY (3 CREDITS)

Prerequisite: Complete at least 54 credits

Co-requisites: None

Syllabus: Data Governance (Working with various types of data, Data Integration, Data reduction and Compression, Data transformation and Data cleaning. Data and Ethics (Privacy and confidentiality, Legal considerations, Intellectual property, Technology divide, Bias and discrimination,Transparency and Explainability of AI, Data and Policy frameworks such as General Data Protection Regulation (GDPR) regulation. Professional development. Data Privacy & Security (Data integrity (accuracy, consistency, and validity of data). Common data integrity threats including human errors, software errors, transmission errors, malware, insider threats, cyber-attacks, and compromised hardware). Analysis of Security. Social responsibility. Data Sharing and Communications. Data and information poisoning. Data quality and handling for security. International frameworks on data privacy & security.

Teaching: Two (2) hours of lectures and two (1) of tutorial per week.

Method of Examination:

In-course Test(s)/Assignment(s)	60%
Final Theory Examination	40%

COMP3XXX DATA VISUALIZATION (3 CREDITS)

Prerequisite: COMP 3605: Introduction to Data Analytics

Co-requisites: None

Syllabus: Introduction to Foundational Considerations (Understanding the basics of design principles, Introduction to data analysis techniques, Importance of user-centered design in interface development, Case studies on successful user-centered design projects). Visualization Techniques (Types of data visualization (charts, graphs, infographics). Tools and software for data visualization, Effective communication through visual data representation. Hands-on exercises in creating meaningful visualizations). User-Centered Design Methodologies. Interaction Design Principles (Principles

of effective interaction design, Gestalt principles in interface design, Cognitive psychology in user interaction, Designing for various devices and platforms). Interface Design and Development (Introduction to interface design tools (Sketch, Adobe XD, Figma). Responsive design and mobile-first approach, Integrating design into development workflows). Dashboard Development and Data Storytelling (Introduction to Power BI and Tableau: Interface and basic functionalities, Building interactive dashboards using real-world datasets, Crafting compelling data narratives and storytelling techniques, Integrating visualizations into a cohesive data story).

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	70%
Final Data Visualization Group Project	30%

DICS3015 – DESIGN & MANAGEMENT OF PLATFORM ECONOMY (3 CREDITS)

Prerequisite: Level I & II courses and the summer II Platform Economy Internship totaling 63 credits or more

Anti-requisite: None

Syllabus:

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP3610 - BIG DATA ANALYTICS (3 CREDITS)

Prerequisite: COMP3605 – Introduction to Data Analytics

Anti-requisite: None

Syllabus: Distributed computing overview. Hadoop File System. MapReduce Design Patterns. Data Ingest. Spark – core. Spark – SQL. Spark – Streaming. Scalable Machine Learning. Apache Hive. HBase. Yarn. Stratosphere and MonetDB. Amazon EC2 and Workflow Management

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

ECON3049 - ECONOMETRICS I (3 CREDITS)

Prerequisite: ECON2025 Statistical Methods I OR ECON2026 Statistical Methods This first course in the econometrics sequence develops the basics of econometrics. Precisely, it explores econometric techniques and methods that help students estimate the relationship(s) between one type of variable called the explained variable and one or more than one variable called the explanatory variable, test relationship(s), verify economic theories, conduct policy analysis, and make informed predictions. The course covers topics in single equation regression model, relaxation of the assumptions of the linear classical model, simultaneous equation model, and time series econometrics.

MGMT3091 - CREATIVITY AND INNOVATION MANAGEMENT FOR ENTREPRENEURSHIP

Prerequisite: MGMT2224 Introduction to Entrepreneurship

Description: This course will introduce students to the concepts, opportunities, and challenges of operating under uncertainty and the role of creativity and innovation management in doing so. The course will provide a framework and tools that will help the participants to be more effective in adapting to changes and innovation in the marketplace. Additionally, it will provide the opportunity for them to examine case studies of innovation management and learn from the best practices employed.

DICS3645 - PLATFORM ECONOMY PROJECT COURSE

Prerequisite: Level I and II

Anti-requisite: None

Syllabus: This course provides students with the opportunity to develop a research project to solve a real-world or research-based problem. Students are given the opportunity to embark on a project that uses the skills learned during Data Science, innovation management and Computer Science courses. They will complete the project in groups ranging from 2 to 4 persons. This course provides students with an opportunity to develop their research skills by collaborating with expert faculty members.

Teaching: Students are required to meet regularly with their supervisors to discuss their research projects.

Method of Examination:

Project Proposal	20%
Final Presentation	20%
Final Report	60%

DICS3105 - APPLIED COMPUTATION THINKING & DATA SCIENCE (3 CREDITS)

Prerequisite: Linear Algebra [MATH 2273], Discrete Mathematics for Computer Science [COMP2201], Computing I [COMP1205]

Anti-requisite: None

Syllabus: What is computation? Branching and Iteration. Decomposition, Abstractions, Functions. Testing, Debugging, Exceptions, Assertions. Introduction to Complexity, Simple Algorithms, and Recursion. Introduction to Knapsack Problem and Dynamic Programming. Introduction to Random Walk, Stochastic Models, and Monte Carlo Simulation. Experimental Design, Hypothesis Testing, Sampling, and Confidence Interval.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

EDRS2202 BASIC DATA ANALYSIS WITH THE COMPUTER (3 CREDITS)

Prerequisites: EDRS 2201

Syllabus: Review of Basic Research Concepts (Levels of measurement, Descriptive Statistics, Inferential Statistics, Purpose of data collection, analysis and research findings, Maintaining raw data files, Data cleaning.) Getting Started in SPSS (Opening a new database, Defining variables, Generating

a list of variables, Entering data in SPSS, Simple ways of checking data (e.g. frequencies, minimum, maximum scores). Saving a file, Printing output, Opening an existing file). Organising Data (Sorting cases, Splitting files, Selecting cases). Transforming Data (Computing variables, Recoding into same and different variables). Descriptive Statistics (Running and interpreting output for descriptive statistical procedures. -Frequencies - Means, standard deviations, cross tabulations etc…). Inferential Statistics (Pearson's Product Moment Correlation, Independent samples t-test, Paired samples t-test, One-way ANOVA, Chi square). Reliability Analysis (Cronbach Alpha). Executing Research and Making a Data Analysis Plan (Sample matrix plan template and Action Research).

Teaching: Two (2) hours of lectures and one (1) hour of tutorial per week.

Method of Examination: 100% Coursework

LEVEL I COMPUTER SCIENCE COURSES

COMP1170 - ENTREPRENEURSHIP FOR COMPUTER SCIENTISTS (3 CREDITS)

Prerequisites: None

Anti-requisite: COMP1130 Web Technology Fundamentals

Syllabus: Entrepreneurship. The importance of technology entrepreneurship. Life stories of successful technology entrepreneurs. How the Internet and EBusiness applications have changed the way that we communicate and provide entrepreneurial opportunities. How the use of e-business has improved the efficiency of business processes. Privacy, security, and legal issues associated with the Internet and entrepreneurship. Market research. Techniques and statistical methods for market research analysis. Pricing strategies. Determining the best price. MS Office tools. Document formatting, table of contents, and creating templates. Spreadsheets. Presentation software. Tools for Statistical Analysis. SPSS, Excel, or others. HTML and HTML5. Marking up text. Creating links, elements, attributes, and forms. Adding images. HTML5 elements and attributes. Audio and video with HTML5. CSS for presentation. Formatting text, floating, and positioning. Page layout. The box model. Introduction to JavaScript: variables, conditional statements, loops, functions, events, the browser object. Server-side scripting: Accessing and manipulating form data, storing form data in a database, and displaying data from the server in a browser.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP1180 – MATHEMATICS FOR COMPUTER SCIENCE I (3 CREDITS)

Prerequisite: [(CAPE Pure Mathematics Unit 1 OR Preliminary Mathematics 1) AND (CAPE Pure Mathematics Unit 2 OR Preliminary Mathematics 2)] OR Equivalent.

Anti-requisite: MATH1101 Basic Mathematics I

Syllabus: Predicate calculus - Propositions, propositional functions, truth tables, universal and existential quantifiers, logical equivalences, rules of inference, DeMorgan's law. Introduction to Mathematical Induction. Sets - Basic

properties, Venn diagrams, algebra of sets, Cartesian product, binary operations on set, countable sets, power set, computer representation of sets. Relations - reflexive, symmetric, transitive, equivalence relation. Functions - basic properties, types (Injection, surjection, bijection, inverse), composition, inverse. Number systems - general laws of associatively, commutatively, distribution. Sequences - Arithmetic and Geometric Progressions. Number Theory - division of integers, Euclidean algorithm. Matrices - basic operation.

Teaching: Two (2) hours of lectures and one (1) hour of tutorial per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP1205 - COMPUTING I (3 CREDITS)

Prerequisites: None

Anti-requisite: COMP1105 Computer Programming I

Syllabus: Problem-solving (top-down, bottom-up, stepwise refinement). Algorithms (pseudocode & flowcharts). Object-oriented concepts (Encapsulation, inheritance, polymorphism, classes, objects, methods, message passing). Integrated Development Environments (editors, compilers, debuggers, and libraries). Program anatomy (primitives, data types, objects, variables & constants). Formatted I/O. Operators (assignment, arithmetic, relational, Boolean, precedence rules). Control structures (sequences, selection, and repetition). Objects & classes (attributes, methods, interfaces, services, pass-by value, pass-by-reference, scope rules). Data structures: arrays (linear, multi-dimensional and parallel), array list, aggregate data structures (enumerations). Memory Concepts and Number Systems. Software testing.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP1210 - COMPUTING II (3 CREDITS)

Prerequisite: Computing I (or COMP1105 Computer Programming I)

Anti-requisite: COMP1115 Computer Programming II

Syllabus: Introduction to Objects and Classes, Fundamental Algorithms for Searching and Sorting, Randomness and Recursion, Data Types, Data Structures, Abstract Data Types, File Processing.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP1215 - UNIX (3 CREDITS)

Prerequisites: None

Anti-requisite: COMP1125 Introduction to UNIX

Syllabus: Overview of UNIX - A short history of UNIX and why UNIX. Getting Started - Logging on and off, passwords, an overview of the shell, command, and utility

syntax, issuing commands. Files and directories management - creating, viewing, removing, renaming, and securing. Job and process management -Scheduling and monitoring both jobs and processes. Text editors - ed, edit, ex, and vi. Basic Account maintenance - shell configuration file, configuration with environmental variables, aliases, and shell functions. UNIX utilities - sed, at, nawk, grep. Shell script programming.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

LEVEL II COMPUTER SCIENCE COURSES

COMP2210– MATHEMATICS FOR COMPUTER SCIENCE II (3 CREDITS)

Prerequisite: COMP1180 Mathematics for Computer Science I (or MATH1101 Basic Mathematics I) Algebraic Structures; Modeling computation.

Anti-requisite: COMP2105 Discrete Mathematics

Syllabus: Logic; Proofs; Mathematical Induction; Number Theory; Algorithms; Relations; Elementary Combinatorics; Discrete Probability; Elementary Graph Theory;

Teaching: Two (2) hours of lectures and one (1) hour of tutorial per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP2220 - COMPUTER SYSTEM ARCHITECTURE (3 CREDITS)

Prerequisite: [COMP1180 Mathematics for Computer Science I (or MATH1101 Basic Mathematics I) AND COMP1210 Computing II (or COMP1115 Computer Programming II)] OR [ELET1210 Digital Electronics I (or ELET1110 Digital Electronics)]

Anti-requisite: COMP2125 Computer Architecture

Syllabus: Basic Computer Architecture; Computer Memory; Computer Arithmetic; The Instruction Cycle; Instructions Sets and Assembly Language Programming; System Interconnection; Instruction Sets; Addressing Modes; CPU Structure and Function (Register organization, instruction cycle, instruction pipelining); RISC vs. CISC Architecture.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP2225 - SOFTWARE ENGINEERING (3 CREDITS)

Prerequisite: COMP1210 Computing II (or COMP1115 Computer Programming II)

Anti-requisite: COMP2145 Software Engineering I

Syllabus: Teams and Tools; Software Development (Requirements analysis, Specifications, design, implementation validation and verification, maintenance); Project and Product Documentation (User manuals, internal documentation); Software Process Models; Agile Development Methodologies; Project Management.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	60%
Final Theory Examination	40%

COMP2232 – OBJECT ORIENTED PROGRAMMING CONCEPTS (3 CREDITS)

Prerequisite: COMP1210 Computing II (or COMP1115 Computer Programming II)

Anti-requisite: COMP2160 Object oriented Programming

Syllabus: Object-Oriented Design; Introduction to UML; Structure of an object-oriented class (Classes and Objects, Encapsulation and Information Hiding, Message Passing); Class Design (Inheritance, Composition, Constructors, Polymorphism, Abstract Classes); Error Handling and Testing (Exceptions, Assertions, Design By Contract).

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP2235 - NETWORKS I (3 CREDITS)

Prerequisite: COMP1210 Computing II (or COMP1115Computer Programming II) AND COMP1215 UNIX (or COMP1125 Introduction to UNIX)

Anti-requisite: COMP2150 Computer Networks I 54 55

Syllabus: OSI and TCP/IP reference models. Network performance. Transmission media. Multiplexing. Packet switching and Circuit switching. Framing. Error detection and Error correction. Cyclic Redundancy Check (CRC). Automatic Repeat request (ARQ). Media Access Control (MAC) sublayer. Ethernet. Wireless LANs and Wireless WANs. Virtual LANs. Spanning Tree Protocol (STP). Bluetooth.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP2245 – WEB DEVELOPMENT CONCEPTS, TOOLS, AND PRACTICES (3 CREDITS)

Prerequisite: COMP1170 Entrepreneurship for Computer Scientists (or COMP1130 Web Technology Fundamentals) OR SWEN1005 Mobile Web Programming

Anti-requisite: COMP2155 Building Web Applications

Syllabus: Overview of Web concepts (TCP/IP, HTTP and HTTPS); The client-server computing model; Web browser architecture; User interface: Visual design and user interaction concepts; Web development stack; Single-, two- and three-tier application architectures; Data validation and verification; Server and application configuration; Relative and absolute paths; Web-accessible directories; Server and application configuration directives; Designing and implementing a three-tier Web application architecture; Client side programming using JavaScript; Server-Side Scripting.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%

Final Theory Examination 60%

COMP2410 – COMPUTING IN THE DIGITAL AGE (3 CREDITS)

Prerequisite: COMP1210 Computing II (or COMP1115 Computer Programming II)

Anti-requisite: None

Syllabus: Ethics. Computer history. Computer organization. Usability. Software engineering and software reliability. Parallel computing. Digital data and copyright. Software as intellectual property. Artificial intelligence. Big Data. Massive open online courses (MOOCs). Crowd computing. Wearable computing. Computational X (biology, photography, psychology).

Teaching: Two (2) hours of lectures and one (1) hour of tutorial per week.

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination 60%

COMP2415 – INFORMATION TECHNOLOGY ENGINEERING (3 CREDITS)

Prerequisite: COMP1210 Computing II (or COMP1115 Computer Programming II)

Anti-requisite: None

Syllabus: Introduction to Statistical Mathematics. Web Analytics - Log file analysis, Page tagging. Introduction to Computer Architecture -Motherboards, Processors, Memory, Peripherals, Storage Mediums (IDE, SATA, SCSI, USB, FireWire, IEEE1394, RAID, NAS, SAN). Virtualization. Introduction to Computer Networks - RJ11, RJ45, Fiber, Wi-Fi, LANs, WANs, DHCP, DNS, VPN. Introduction to Servers - Web Servers (Apache, TomCat, JBOSS, IIS), FTP Servers, Email Servers, Proxy Servers. Version Control - Subversion, GIT. Cloud Computing.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination 60%

COMP2611 – DATA STRUCTURES (3 CREDITS)

Prerequisite: COMP1210 Computing II (or COMP1115 Computer Programming II) AND COMP1215 UNIX (COMP1125 Introduction to UNIX)

Anti-requisite: COMP2115 Information Structures

Syllabus: Abstract Data Types (Lists, Queues, Double ended queues, Priority queues, Stacks); Dictionaries (Binary search trees, AVL-trees, Red-Black trees, Splay trees, Binary heaps, B-trees); Sets; Vectors; Hashing; and collision resolution schemes; Sorting algorithms; Searching techniques; Data compression.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination 60%

COMP2950 - COMPUTER SCIENCE ELECTIVE (3 CREDITS)

Prerequisites: None

Syllabus: An advanced course in Computer Science taken as an exchange student at an approved institution and pre-approved by the Director of Academic Affairs.

LEVEL III COMPUTER SCIENCE COURSES

COMP3310 - ALGORITHMS (3 CREDITS)

Prerequisites: COMP2210 Mathematics for Computer Science II (or COMP2105 Discrete Mathematics) AND COMP2611 Data Structures (or COMP2115 Information Structures)

Anti-requisite: COMP3180 Algorithm Design and Analysis

Syllabus: Analysis of Algorithms: Time and Space Complexities; Algorithm Design Techniques (Bruteforce, Divide and Conquer, Preprocessing, Dynamic Programming, Greedy Algorithms); Limits of Computability (Lower Bounds, Tractable and Intractable Problems, Dealing with NPCompleteness); Empirical measurements of performance.

Teaching: Two (2) hours of lectures and Two (2) hours of labs per week

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination (2 hours) 60%

COMP3320 - DESIGN PRINCIPLES OF OPERATING SYSTEMS (3 CREDITS)

Prerequisites: COMP2220 Computer System Architecture (or COMP2125 Computer Architecture) AND COMP2611 Data Structures (or COMP2115 Information Structures)

Anti-requisite: COMP3100 Operating Systems

Syllabus: Characteristics of Modern Operating Systems; Operating System Structure and Architecture; Process Management (processes and threads, process creation and termination, process synchronization, CPU scheduling, deadlocks); Memory Management (memory allocation schemes, memory partitioning, paging, virtual memory, segmentation); File management (file organization, file system implementation, file system examples, mass storage; Device Management (I/O devices, device drivers, I/O design issues, disk scheduling); Protection and Security (security threats (program and network threats), protection mechanisms, trusted systems).

Teaching: Two (2) hours of lectures and One (1) hour of tutorial per week.

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination (2 hours) 60%

COMP3330 – DATABASE MANAGEMENT SYSTEMS I (3 CREDITS)

Prerequisite: COMP2611 Data Structures (or COMP2115 Information Structures)

Anti-requisite: COMP3160 Database Management Systems

Syllabus: Precursors to Relational Databases. Requirements Gathering, Database Design and ERDs. Normalization – Closures, Functional Dependencies, and Keys, Joins and decomposition, Integrity constraints. Introduction to SQL. Database maintenance. Stored Procedures, Transactions, and Triggers. Database drivers.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s) 40%

Final Theory Examination 60%

COMP3360 - NETWORKS II (3 CREDITS)

Prerequisite: COMP2235 Networks I (or COMP2150 Computer Networks 1)

Anti-requisite: COMP3155 Computer Networks II

Syllabus: Routing. Router Design and Implementation. Routing algorithms. Internet Protocol (IP). Subnets. Internet Control Message Protocol (ICMP). Internet Group Management Protocol (IGMP). Sockets. Socket programming. Transmission Control Protocol (TCP). User Datagram Protocol (UDP). Stream Control Transmission Protocol (SCTP). Congestion control. Congestion control algorithms. Quality of Service (QoS).

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination 60%

COMP3365 - NETWORKS III (3 CREDITS)

Prerequisite: COMP3360 Networks II (or COMP3155 Computer Networks 2)

Anti-requisite: None

Syllabus: Network modeling and measurement. Hypertext Transfer Protocol (HTTP). Domain Name System (DNS). Dynamic Host Configuration Protocol (DHCP). File Transfer Protocol (FTP). Simple Mail Transfer Protocol (SMTP). Internet Message Access Protocol (IMAP). Post Office Protocol (POP). Simple Network Management Protocol (SNMP). Network time protocol (NTP). Border Gateway Protocol (BGP). Peerto-Peer (P2P) networks. Streaming Audio and Video. Voice over IP (VoIP). Content Delivery Network (CDN).

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination 60%

COMP3370 - SOFTWARE ENGINEERING ON A LARGE SCALE (3 CREDITS)

Prerequisites: COMP2225 Software Engineering (or COMP2145 Software Engineering I)

Anti-requisite: COMP3140 Software Engineering II

Syllabus: The Challenges of Engineering Large Systems; Introduction to Modelling and Class Diagrams; Reverse Engineering; Software Architecture; Approaches to Project Management; Project Selection and Feasibility Analysis; Project Cost Estimation; Planning, Resource Scheduling and Control Techniques; Software Validation and Deployment; The Team Environment.

Teaching: Two (2) hours of lectures and Two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination (2 hours) 60%

COMP3375 - SOFTWARE TESTING AND QUALITY (3 CREDITS)

Prerequisites: COMP2225 Software Engineering (or COMP2145 Software Engineering I)

Anti-requisite: COMP3165 Software Quality Assurance

Syllabus: What Is Software System Quality? Software Quality Product and Process Metrics; Measuring and Analysing Customer Satisfaction Fundamentals; The Objectives and Limits of testing; Test Types and the Software Development Process; Reporting and Analysing Errors; Specific Testing Skills; The Problem Tracking System; Test Case Design; Testing Tools; Test Planning and Test Documentation.

Teaching: Two (2) hours of lectures and Two (2) hours of labs per week. 58 59

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination (2 hours) 60%

COMP3385 - FRAMEWORK DESIGN FOR ADVANCED WEB DEVELOPMENT (3 CREDITS)

Prerequisites: COMP2245 Web Development Concepts, Tools, and Practices (or COMP2155 - Building Web Applications)

Anti-requisite: COMP3170 Web-based Applications

Syllabus: Design Patterns (Design patterns and principles, Design Patterns for flexible object programming, Database patterns, Design patterns in JavaScript); Version Control (Configuring and using open-source version control systems); Web Services (Introduction to SOAP and XML-RPC, The REST architectural style, RESTful web services); API Design (The API design process, Characteristics, and guidelines for API design); Client-side JavaScript framework design (Framework styles: structure, helper methods, plugins etc., Prototype classes, inheritance, class implementation, Selector Engines, Animations and touch, Cross Domain requests with AJAX, Feature detection, Chained APIs); Server-side framework design (Framework styles: layered, pipe-and-filter, Common framework features: scaffolding, internationalization, fall-back data validation, session management; Web services; Controllers; Data abstraction; Templating systems (themes); security; authentication; error handling).

Teaching: Two (2) hours of lectures and Two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s) 40%
Final Theory Examination (2 hours) 60%

COMP3412 - SCALABLE ENTERPRISE WEB APPLICATIONS (3 CREDITS)

Prerequisites: COMP3330 Database Management Systems I (or COMP3160 Database Management Systems) AND COMP3385 Framework Design for Advanced Web Development

Anti-requisite: None

Syllabus: Design patterns for flexible object-oriented programming; Enterprise design patterns; Good and bad design and coding practices; Continuous integration; Designing scalable web applications (Scalability patterns and best practices, Scalability challenges, Scalability testing and anti-patterns); Caching for web applications (Caching concepts, design, caching anti-patterns and strategies); Enterprise Web Applications Security; Enterprise Web Application Testing; Application Deployment to the cloud; Performance of Enterprise Web Applications; Web analytics-based performance improvement.

Teaching: Two (2) hours of lectures and Two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination (2 hours)	60%

COMP3415 – DATABASE MANAGEMENT SYSTEMS II (3 CREDITS)

Prerequisite: COMP3330 Database Management Systems I (or COMP3160 Database Management Systems)

Anti-requisite: None

Syllabus: Physical Data Access Methods. Query Processing and Optimization. Concurrency Control, Recovery. Client Server and Distributed Databases -Failures in a Distributed Environment, Commit Protocols, Replication. Data Warehousing and Online Analytical Processing - Operational Data versus Decision Support Data, Decision Support Database Requirements, Components of a Decision Support System. Data Lakes and Data Vaults. Data Vault Modelling. Big Data Databases and NoSQL. Data mining.

Teaching: Two (2) hours of lectures and two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP3420 - COMPUTER GRAPHICS (3 CREDITS)

Prerequisites: COMP2611 Data Structures (or COMP2115 Information Structures)

Anti-requisite: COMP3260 Computer Graphics I

Syllabus: Raster graphics; Coordinate systems and transformations; The viewing frustum; The graphics pipeline and toolkits; Clipping and culling; Lighting and shadows; Transparency and blending; Texture mapping; Local shading models; Environment mapping techniques; Shaders; Animation and particles; Portable Network Graphics (PNG) programming; OpenGL programming.

Teaching: Two (2) hours of lectures and Two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination (2 hours)	60%

COMP3425 - MOBILE APPLICATIONS FOR IOS DEVICES (3 CREDITS)

Prerequisites: COMP2611 Data Structures (or COMP2115 Information Structures) AND COMP2225 Software Engineering (or COMP2145 Software Engineering 1)

Anti-requisite: None

Syllabus: Program Development on the Xcode IDE; Swift programming; Xcode and Interface Builder; Cocoa Design Patterns; Views and the View Hierarchy; Memory Management; Text Input and Delegation; View Controllers; Interaction with UIControls; UITableView and UITableViewController; Orientation and iOS Device Sensors; Testing and Debugging.

Teaching: Two (2) hours of lectures and Two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination (2 hours)	60%

COMP3435 – USER-INTERFACE DESIGN (3 CREDITS)

Prerequisites: COMP2611 Data Structures (or COMP2115 Information Structures) AND COMP2225 Software Engineering (or COMP2145 Software Engineering 1)

Anti-requisite: COMP3220 Human Computer Interaction

Syllabus: Relationship to computer science and software engineering; Influences on interface design; General models and guidelines; Methods of designing interfaces; Software and hardware interface implementation; Mechanisms of evaluation; Future directions of user interface design.

Teaching: Two (2) hours of lectures and Two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination (2 hours)	60%

COMP3440 – E-COMMERCE (3 CREDITS)

Prerequisites: COMP2245 Web Development Concepts, Tools, and Practices (or COMP2155 - Building Web Applications)

Anti-requisite: COMP3210 Electronic Commerce

Syllabus: Introduction to e-commerce; Definition of ecommerce, e-business, m-commerce, and egovernance; Advantages/disadvantages of ecommerce; Waves of e-commerce; SWOT analysis; business objectives and international issues facing ecommerce; Planning e-commerce initiatives; Identifying products and services; Business plans; ECommerce legislation and Internet law; Borders and jurisdiction; Website design, usability, evaluation, and creation; User interface design; Internetworking and the world wide web; client side programming; server side programming; Processing payments and order fulfillment; Securing e-commerce initiatives; Computer, server and communication channel security; Marketing website and promoting products and services; Revenue models, marketing strategies, customer relationship models and web advertising.

Teaching: Two (2) hours of lectures and Two (2) hours of labs per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination (2 hours)	60%

COMP3445 – COMPUTER INFORMATION SYSTEMS (3 CREDITS)

Prerequisites: COMP2225 Software Engineering (or COMP2145 Software Engineering I) AND COMP2245 Web Development Concepts and Practices (or COMP2155 - Building Web Applications)

Anti-requisite: COMP3115 Information Systems

Syllabus: Definitions of information and system concepts; IS frameworks; Types of information systems; Information systems in society, business and industry; Software issues and trends: Databases and business intelligence; E-business and mobile commerce; ICT in e-business and business process performance; The personal and social impact of computers; Network and telecommunication systems; Societal and ethical issues relating to information systems; Enterprise, information and decision support systems; Knowledge management systems, knowledge management workers;

artificial intelligence, expert systems; and virtual reality; Characteristics of information systems professionals; information system careers; Information and specification; design, implementation and re-engineering of information systems; Systems theory; decision support; information systems strategies; role of information and IT; and role of people using, developing and managing systems; Information and organisational systems; ICT Micro enterprises and entrepreneurship; digital divide; the informal sector; Health information systems.

Teaching: Two (2) hours of lectures and One (1) hour of tutorial per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination (2 hours)	60%

COMP3450 – FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE (3 CREDITS)

Prerequisite: COMP2210 Mathematics for Computer Science II (or COMP2105 Discrete Mathematics) AND COMP2611 Data Structures (or COMP2115 Information Structures)

Anti-requisite: COMP3125 Artificial Intelligence

Syllabus: Intelligent agents. Search algorithms. Knowledge representation. Machine learning. Probabilistic reasoning.

Teaching: Two (2) hours of lectures and one (1) hour of tutorial per week.

Method of Examination:

In-course Test(s)/Assignment(s)	40%
Final Theory Examination	60%

COMP3490 – RESEARCH PROJECT IN COMPUTER SCIENCE (3 CREDITS)

Prerequisite: None

Anti-requisite: COMP3910 Research Project

Syllabus: This course provides students with the opportunity to develop a research project to solve a real-world or research-based problem. Students are given the opportunity to embark on a project that uses the skills learned during Computer Science courses. This course provides students with an opportunity to develop their research skills by collaborating with a Computer Science faculty member.

Teaching: Students are required to meet regularly with their supervisors to discuss their research projects.

Method of Examination:

Project Proposal	20%
Final Presentation	20%
Final Report	60%

COMP3495 – MAJOR RESEARCH PROJECT IN COMPUTER SCIENCE (6 CREDITS)

Prerequisite: None

Anti-requisite: COMP3920 Computer Science Major Research Project

Syllabus: This course provides students with the opportunity to develop a research project to solve a real-world or research-based problem. Students are given the opportunity to embark on a project that uses the skills learned during

Computer Science courses. They will take this course from Semester I through Semester II. This course provides students with an opportunity to develop their research skills by collaborating with a Computer Science faculty member.

COMP3499 – GROUP RESEARCH PROJECT IN COMPUTER SCIENCE (3 CREDITS)

Prerequisites: None

Anti-requisite: COMP3930 Computer Science Group Research Project

Syllabus: This course provides students with the opportunity to develop a research project to solve a real-world or research-based problem. Students are given the opportunity to embark on a project that uses the skills learned during Computer Science courses. They will complete the project in groups ranging from 2 to 4 persons. This course provides students with an opportunity to develop their research skills by collaborating with a Computer Science faculty member.

Teaching: Students are required to meet regularly with their supervisors to discuss their research projects.

Method of Examination:

Project Proposal	20%
Final Presentation	20%
Final Report	60%

COMP3955 – COMPUTER SCIENCE INTERNSHIP (3 CREDITS)

Prerequisite: GPA of 3.0 or above in the Computer Science or Information Technology Major. The student must have completed or be enrolled in courses totaling sixty (60) credits or more. The department must approve the student. Approval by the department does not, however, guarantee placement. Enrolment in an internship is subject to successful placement at a participating host organization.

Objectives: To provide the opportunity for students to gain workplace experience to improve their employment readiness by the time of graduation.

Syllabus: The course provides a formal internship of at least 4 weeks (160 hours) duration at a relevant private sector, public sector, or non-Governmental organisation during which students undertake agreed-upon activities relevant to their studies. Students will work under the guidance of a workplace supervisor as well as an on-campus supervisor and will submit a report and make a presentation within the Department at the end of the internship. Through exposure to the working environment, students will acquire transferable skills that will be useful in any future employment sphere. Professional placement in an organisation will normally take place during the summer school period, and students will be registered for the course as a summer school course. Students intending to register for the course in the summer must present an up-to-date curriculum vitae (CV) to the course coordinator by a stated deadline in semester 2. At the same time, host organisations will meet with the course coordinator and provide a summary of possible activities (work plan) successful students would undertake in their organisation. Student CVs will be circulated to potential workplace supervisors and the course coordinator will assign placements to the mutual satisfaction of the students and host organisations. Students may have to attend an

interview before embarking on the professional placement.

Method of Examination:

Student's Placement Report	50%
Workplace Supervisor's Appraisal	35%
Oral presentation of the report	15%

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