BSc (Hons) Applied Computing (Full Time) - IC319

1. CONTEXT AND OBJECTIVES

As Information Technology (IT) continues to be the enabler of development and increasing integration into all aspects of the global economy, there is a crucial need for skilled IT professionals who can easily use and apply IT to solve problems in different application domains.

This programme of study aims at producing graduates with practical knowledge and skills to develop, enhance and maintain computing applications by applying classic and leading-edge computing concepts and technologies. The programme provides students with a solid grounding in areas such as Computer and Web Programming, Database Systems, Internet and Communication Technologies, and the use of IT in interdisciplinary areas such as Health, Finance and Environment.

The programme is in line with international recommendations of computing curricula for Undergraduate Degree Programmes in Applied Computing and designed in collaboration with the IT industry.

Objectives
The objectives of this programme are to enable students to:

- identify and critically analyse common computing problems and to conduct application driven research;

- apply computing theories, principles and concepts with technologies to creatively design, develop, and verify computational solutions;

- grow as a mature professional and be able to take leadership roles with good knowledge of software development, and applications in interdisciplinary or multidisciplinary areas; and

- keep up-to-date in the field of IT through continuous professional growth.

Competencies and Career Opportunities
The programme provides students with a solid foundation in software development along with best practices in the development of mobile, web and multimedia applications. Students will be also exposed to commonly used programming languages, frameworks as well as topics such as networking, IoT, enterprise system and security.

There are lots of career prospects in software development notably in areas such as programming, web, mobile, enterprise systems, databases, networking and cloud computing.

Competencies
After successful completion of this programme, students should be equipped with the following competencies:

- analytical, problem solving and programming skills;

- effective communication skills; and

- adaptability and flexibility skills.

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2. LEARNING OUTCOMES

Graduates of the BSc (Hons) Applied Computing programme should be able to:
- Show an understanding of the different underlying aspects of software technologies and their use in multiple domains;
- Analyse various technologies before undertaking major computing projects;
- Apply fundamental computing knowledge to immediate professional software development tasks;
- Evaluate and synthesise data from appropriate sources to make independent decisions and sound judgment in relation to the IT industry;
- Design, develop and deliver software using industry recognized best practices that meet applicable standards for utility, reliability, robustness, performance, correctness, maintainability, reusability, portability, and economy;
- Demonstrate flexibility and openness to the fast-changing technology sector;
- Communicate clearly, fluently and effectively both orally and in writing; and
- Demonstrate lifelong learning capabilities, such as the ability to learn new tools and generally adapt to new surroundings throughout their career.

3. TEACHING AND LEARNING METHODS

The BSc (Hons) Applied Computing programme consists of Teaching Contact Hours, Self-Study and Other Learning Activities. Teaching methods may include face to face lectures, online delivery, tutorials or practical sessions.

For each module, 6 LCCS credits contribute to 30 hrs of direct contact, 60 hrs of self-study and 90 hrs of other activities, except for ICDT 1200, ICDT 2200 & DGT 3000Y, for which the details about the total hours in each category will be specified in the module catalogue.

Other Learning Activities may comprise of the following:

- Working on assignments;
- Preparation for Class Tests and Examinations;
- Sitting for Class Tests and Examinations;
- Group work;
- Attending Workshops/Conferences recommended by the Department/Faculty;
- Fieldwork;
- Site Visits/Trips;
- Presentations among peers;
- Experiential Learning; and
- Guest lectures.

4. ENTRY REQUIREMENTS

● **General Requirements**
  As per General Entry Requirements for Admission to the University for Undergraduate Degrees.

● **Programme (Specific) Requirements**
  At Least **2 GCE 'A' Level Passes**, including either
  ● Mathematics
  OR
  ● Computer Studies/Computing

5. PROGRAMME DURATION

	Normal (Years)	**Maximum (Years)**
Degree:	3	5

6. MINIMUM LCCS CREDITS REQUIRED FOR DEGREE AWARD:

− **For each Academic Year:** As per University Regulations.
  Students may register for a maximum of 96 LCCS credits and a minimum of 12 LCCS credits, per year.

− **For Degree Award:**
  For the degree award in BSc (Hons) Applied Computing, the student must obtain at least 206 LCCS credits as indicated below:

	Core Modules	**Dissertation**	**Industrial Training**	**Electives**	**Total LCCS Credits**
Degree	170	18	6	12	206
Diploma	108	12	-	-	120
Certificate	60	-	-	-	60

− **Exit points: (optional)**

● Students may exit with a Diploma in Applied Computing after having earned 120 LCCS credits.
  A student may also opt to complete a Diploma project, worth 12 LCCS credits, to attain the 120 LCCS credits. The assessment of the Diploma project will be based on project report, presentation and software/system demo. Written requests to exit with Diploma should be made to the Dean of Faculty.

● Students may exit with a Certificate in Applied Computing after having earned 60 LCCS credits.

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7. ASSESSMENT AND DEADLINES

7.1 Examinations: 60% - 70 % (except those listed below)

The following modules will be examined on 100% coursework:
ICDT 1016Y(1) Communication and Business Skills for IT

7.2 Continuous Assessment: 30 - 40 %

The specific details and/or formula for the calculation of the final mark for each module are included in its corresponding Module Catalogue. An overall total of at least 40% for combined continuous assessment and written examination components would be required to pass the module.

Industrial Training will be assessed as either "Satisfactory" or "Unsatisfactory".

7.3 Submission Deadline for Dissertation/Research Project: As per University Regulations.

8. LIST OF MODULES

Module Code CORE	Module Name	L/T/P# Contact Hours/Week	Self-Study Hours/Week	Other Learning Hours/Week	LCCS Credits
CORE MODULES (YEARLY AND SEMESTER)					
ICDT 1016Y(1)	Communication and Business Skills for IT	2+1+0	6	9	12
DGT 1031Y(1)	Database Systems and Administration	2+0+1	6	9	12
DGT 1032Y(1)	Web Design and Development	2+0+1	6	9	12
DGT 1033Y(1)	Business Computing	2+1+0	6	9	12
DGT 1034Y(1)	Mathematics for Computing	2+1+0	6	9	12
DGT 1038Y(1)	Programming and Data Structures	2+0+1	6	9	12
ICDT 1200	Practical Training	1 Week (30 Total)	1 Week (15 Total)	1 Week (15 Total)	2
SIS 2025Y(3)	Enterprise Systems	2+0+1	6	9	12
DGT 2029Y(3)	Multimedia Authoring and Development	2+0+1	6	9	12
DGT 2030Y(3)	Networking Principles	2+0+1	6	9	12

DGT 2034Y(3)	Internet Technologies and Web Services	2+0+1	6	9	12
DGT 2035Y(3)	Software Modelling and Design	2+0+1	6	9	12
DGT 2036Y(3)	Principles of Software Development	2+1+0	6	9	12
ICDT 2200	Industrial Training	(10 Weeks)	-	-	6
DGT 3000Y(5)	Final Year Project	-	-	-	18
DGT 3122Y(5)	Distributed and Cloud Computing	2+0+1	6	9	12
DGT 3123Y(5)	Mobile Computing and Wireless Technologies	2+0+1	6	9	12
TO CHOOSE ELECTIVE(s) OFFERED BY THE DEPARTMENT					
DGT 3098Y(5)	Applied Cybersecurity	2+0+1	6	9	12
DGT 3099Y(5)	Sensor Systems and Applications	2+0+1	6	9	12
DGT 3113Y(5)	Computing for Life Sciences	2+0+1	6	9	12
DGT 3120Y(5)	Graphics Design and Image Processing Applications	2+0+1	6	9	12

Note:

1. Contact Hours = Lectures, T= Tutorials, P#= Practicals
2. Offering of electives would be subject to availability of resources and critical mass

The Department reserves the right to offer additional electives

9. PROGRAMME PLAN

YEAR 1

Module Code	Module Name	HRS/WK L/T/P#	LCCS Credits
ICDT 1016Y(1)	Communication and Business Skills for IT	2+1+0	12
DGT 1031Y(1)	Database Systems and Administration	2+0+1	12
DGT 1032Y(1)	Web Design and Development	2+0+1	12
DGT 1033Y(1)	Business Computing	2+1+0	12
DGT 1034Y(1)	Mathematics for Computing	2+1+0	12
DGT 1038Y(1)	Programming and Data Structures	2+0+1	12
ICDT 1200	*Practical Training*	1 Week (30hrs Total)	2
Sub Total			**74**

YEAR 2

Module Code	Module Name	HRS/WK L/T/P#	LCCS Credits
SIS 2025Y(3)	Enterprise Systems	2+0+1	12
DGT 2029Y(3)	Multimedia Authoring and Development	2+0+1	12
DGT 2030Y(3)	Networking Principles	2+0+1	12
DGT 2034Y(3)	Internet Technologies and Web Services	2+0+1	12
DGT 2035Y(3)	Software Modelling and Design	2+0+1	12
DGT 2036Y(3)	Principles of Software Development	2+1+0	12
ICDT 2200	*Industrial Training*	10 Weeks	6
Sub Total			**78**

YEAR 3

Module Code	Module Name	HRS/WK L/T/P#	LCCS Credits
DGT 3000Y(5)	Final Year Project		18
DGT 3122Y(5)	Distributed and Cloud Computing	2+0+1	12
DGT 3123Y(5)	Mobile Computing and Wireless Technologies	2+0+1	12
ELECTIVES	**Choose ONE (1) module from:**		
DGT 3098Y(5)	Applied Cybersecurity	2+0+1	12
DGT 3099Y(5)	Sensor Systems and Applications	2+0+1	12
DGT 3113Y(5)	Computing for Life Sciences	2+0+1	12
DGT 3120Y(5)	Graphics Design and Image Processing Applications	2+0+1	12
Sub Total			**54**
Total 206			

This Programme has been amended as follows: 2013, 2017, 2018, 2019, 2020