BSc (Hons) Electronics with Computer Science - E331 (Under Review)

1. Objectives

This programme aims at producing graduates in the field of Electronics with a strong bias in Computer Science, in order to adapt to the rapid development in these two areas. Students will be provided with a strong background in Electronics, Computer Technology, mobile and wireless technologies, database design as well as implementation and their integration in diverse applications. With a strong background in the fields of electronics and computer science, graduates can expect to find attractive career opportunities in electronics industry and software development companies.

2. General Entry Requirements

As per General Entry Requirements for admission to the University for Undergraduate Degrees.

3. Programme Requirements

2 GCE 'A' Level Passes in Mathematics and one of the following subjects: Physics, Physical Science, Engineering Science, Physics with Chemistry.

4. (i) Minimum Requirements for Degree Award

MODULES	CREDITS
Core ELEC modules	61
Core CSE modules	27
Electives	12
TOTAL	**100**

- For the degree award all core modules prescribed by the department must be completed.

(ii) Minimum Requirements for Diploma Award

A student may opt for a Diploma in Electronics with Computer Science provided s/he satisfies the following minimum requirements. The Diploma project would normally be of 8 weeks duration for an input of at least 90 hours.

MODULES	CREDITS
Core modules	54
Diploma Project (ELEC 2000(3))	6
TOTAL	**60**

5. Programme Duration: Normal 3 years
Maximum 5 years

6. Credits per Year: Minimum 18, Maximum 48 subject to Regulation 5.

7. Assessment

Continuous and Written Assessment of Modules

Assessment will be based on a written examination of 2 to 3-hour duration (normally a paper of 2 hour duration for modules carrying less or equal to 3.5 credits and 3 hour paper for modules carrying four-six credits) and on continuous assessment done during the semester or year.

Written examinations for all modules, whether taught in semester 1 or in semester 2 or both, will be carried out at the end of the academic year (unless otherwise stated).

The continuous assessment will count for **20% to 30%** of the overall percentage mark of the module(s), except for a Programme where the structure makes for other specific provision(s). Continuous assessment may be based on laboratory work, seminars and/or assignments and **should include at least 2 class tests/assignments per module.**

There will be at least one compulsory class test for all modules taught in semester 1 at the end of semester 1 of the given academic year unless stated otherwise in the Programme Structure.

An overall total of 40% for combined assessment and written examination components would be required to pass the module, without minimum thresholds within the individual continuous assessment and written examination.

Special examinations (e.g. class tests) will be arranged at the end of semester 1 or semester 2 for exchange students who have registered only for one semester. In case of yearly modules, credits will be assigned on a pro-rata basis.

8. Repeat and Termination of Registration

If the CPA of a student is <40% for an academic year, s/he will have to repeat the entire academic year, and retake modules as and when offered. However, s/he will not be required, if s/he wishes, to retake modules for which Grade C or above has been obtained.

Students will be allowed to repeat only once over the entire duration of the Programme of Studies.

Registration of a student will be terminated if:

(i) the CPA < 40% at the end of an academic year and the student has already repeated one year of study; or
(ii) the maximum duration allowed for completion of the Programme of Studies has been exceeded; or
(iii) s/he is a year 1 student who has scored a CPA of <25% at the end of an academic year (for yearly programmes). However the Board of Examiners might allow a repeat if there are evidence of compelling circumstances or valid medical grounds.

9. List of Modules – BSc (Hons) Electronics with Computer Science

CORE MODULES		**Hrs/Wk L+P**	**Credits**
CSE 1018Y(1)	Computer Programming	1.5+2	5
ELEC 1053Y(1)	Digital Electronics 1	2+1	5
ELEC 1060Y(1)	Analytical Methods	3+0	6
ELEC 1061Y(1)	Discrete Mathematics and Sampling Techniques	2.5+0	5
ELEC 1062Y(1)	Electrical Engineering and Analog Electronics	2+2	6
CSE 1001Y(1)	Fundamentals of Computer Science	2.5+1	6
ELEC 1200	Practical Training/ Software Development	8 weeks	0
CSE 2010Y(3)	Network Computing	1.5+2	5
WCS 2200(3)	Writing Case Studies	-	3
CSE 2001Y(5)	Software Engineering	2.5+1	6
CSE 2011Y(3)	Database and Information Systems	2+1	5
ELEC 2060Y(3)	Microprocessor	2+1	5
ELEC 2061Y(3)	Data and Computer Communications	2+0	4
ELEC 2062Y(3)	Analog Electronics	2+2	6
ELEC 3000(5)	Degree Project	-	10
ELEC 3055Y(5)	Power Electronic Systems	2.5+1	6
ELEC 3070Y(5)	Communication Systems	2+1	5

ELECTIVES			
ELEC 3053Y(5)	Telecommunications Network	3+0	6
ELEC 3057Y(5)	Discrete Time Signal Processing	3+0	6
ELEC 3061Y(5)	Broadcasting Technologies	3+0	6
CSE 3005Y(5)	Artificial Intelligence	2+2	6
CSE 3006Y(5)	Operations Research and Simulation	2+2	6
CSE 3010Y(5)	Neural Networks, Fuzzy Systems and Genetic Algorithms	2+2	6
ELEC 3058Y(5)	Digital System Design	2.5+1	6
ELEC 3063Y(5)	Coding for Data Transmission	3+0	6

NOTE 1:
Core module for Diploma: ELEC 2000(3): Diploma Project (6 credits)
NOTE 2:
For a student to clear the module ELEC 1200 s/he must obtain Grade S (Satisfactory) in the module.

10. Programme Plan – BSc (Hons) Electronics with Computer Science

LEVEL 1
Semester 1 & 2

CODE	MODULE	Hrs/Wk	Credits
CORE		**L+P**	
ELEC 1053Y(1)	Digital Electronics 1	2+1	5
ELEC 1060Y(1)	Analytical Methods	3+0	6
ELEC 1061Y(1)	Discrete Mathematics and Sampling Techniques	2.5+0	5
ELEC 1062Y(1)	Electrical Engineering and Analog Electronics	2+2	6
CSE 1018Y(1)	Computer Programming	1.5+2	5
CSE 1001Y(1)	Fundamentals of computer science	2.5+1	6
ELEC 1200	Practical Training/Software Development	8 weeks	0
		Sub-Total	**33**

LEVEL 2
Semester 1 & 2

CODE	MODULE	Hrs/Wk	Credits
CORE		**L+P**	
CSE 2010Y(3)	Network Computing	1.5+2	5
WCS 2200(3)	Writing Case Studies	-	3
CSE 2001Y(5)	Software Engineering	2.5+1	6
CSE 2011Y(3)	Database and Information Systems	2+1	5
ELEC 2060Y(3)	Microprocessor	2+1	5
ELEC 2061Y(3)	Data and Computer Communications	2+0	4
ELEC 2062Y(3)	Analog Electronics	2+2	6
		Sub-Total	**34**

LEVEL 3
Semester 1 & 2

CODE	MODULE	Hrs/Wk	Credits
CORE		**L+P**	
ELEC 3000(5)	Degree Project	-	10
ELEC 3055Y(5)	Power Electronic Systems	2.5+1	6
ELEC 3070Y(5)	Communication Systems	2+1	5
			12
ELECTIVES		**Sub-Total**	**33**

Choose any two (2) Electives

ELEC 3053Y(5)	Telecommunications Network	3+0	6
ELEC 3057Y(5)	Discrete Time Signal Processing	3+0	6
ELEC 3061Y(5)	Broadcasting Technologies	3+0	6
CSE 3005Y(5)	Artificial Intelligence	2+2	6
CSE 3006Y(5)	Operations Research and Simulation	2+2	6
CSE 3010Y(5)	Neural Networks, Fuzzy Systems and Genetic Algorithms	2+2	6
ELEC 3058Y(5)	Digital System Design	2.5+1	6
ELEC 3063Y(5)	Coding for Data Transmission	3+0	6