DEPARTMENT OF COMPUTER & SOFTWARE ENGINEERING

BSC DEGREE IN COMPUTER ENGINEERING WITH OPTION IN:

A) SOFTWARE ENGINEERING

B) NETWORK ENGINEERING

PROGRAMME LEARNING OUTCOMES

The programme provides opportunities for the student learners to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have been referenced to the Qualification Descriptors for Level 5 (Honors Bachelor Degree) of the Rwandan National Qualifications Framework for Higher Education Institutions and to the UK benchmark statement for Engineering and the requirements of engineering professional institutions/bodies defined in UK-SPEC and IEEE/ACM specification for Computer Engineering.

A. Knowledge and Understanding

At the end of the programme learners should be able to demonstrate knowledge and understanding of:

A1. Mathematics and sciences relevant to computer engineering.

A2. The fundamental concepts, principles and theories of computing.

A3. Design and development of hardware and software at a specialist level.

A4. The principles of design and development including an awareness of standards of practice.

A5. The professional, legal and ethical responsibilities of a computer engineer.

A6. The environmental and social impact of computer engineering activity.

A7. Business and management techniques relevant to computer engineering.

A8. Quality and benchmarks in computer software and software development.

B. Cognitive/Intellectual skills/Application of Knowledge

At the end of the programme learners should be able to:

B1. Select and apply appropriate mathematical methods for modeling and analyzing computer engineering problems.

B2. Use scientific and engineering principles in the development of solutions to problems in computer engineering.

B3. Apply engineering knowledge and computing standards to produce innovative designs of computer system, software systems and components.

B4. Critically assess engineering work done by others.

B5. Analyze failures in computer systems and devise ways to prevent them.

B6. Apply technical knowledge to produce a technical risk assessment.

B7. Apply professional knowledge to produce a commercial risk assessment.

B8. Apply technical and professional knowledge to assess environmental and social impact of computer engineering activities.

C. Communication/ICT/Numeracy/Analytic Techniques/Practical Skills

At the end of the programme learners should be able to:

C1. Specify, plan, manage, conduct and report on a computer engineering research project.

C2. Prepare technical reports and deliver technical presentations.

C3. Use competently and safely standard electrical/electronic/computer laboratory instrumentation.

C4. Observe and record accurately data and experimental evidence both in the laboratory and in the field.

C5. Analyze, evaluate and interpret data and apply them to the solution of computer engineering problems.

C6. Plan the installation and maintenance of computer hardware, software, computer systems and equipment.

C7. Demonstrate an awareness of practical computing skills.

C8. Use computational tools and packages appropriate to computer engineering

D. General transferable skills

At the end of the programme learners should be able to:

D1. Have the capacity for self-learning in familiar and unfamiliar situations.

D2. Undertake life long learning.

D3. Carry out independently a sustained investigation.

D4. Work effectively in a team both as a member or leader.

D5. Efficiently manage both time and resources.

D6. Communicate effectively (written, verbal, drafting, sketching etc.)

D7. Demonstrate general numerical skills and problem solving skills.

D8. Use competently information technology (ICT).