COMPUTER SYSTEMS ENGINEERING

BSc (Hons) in Computer Science degree programme produces high quality graduates with strong analytical and quantitative skills with a comprehensive knowledge in Mathematics, Programming, Software Engineering, System Modelling, and Research. The graduates must be versatile in the knowledge drawn from the key knowledge areas of Computer Science including Algorithms Design and implementation, Intelligent Systems, Parallel Computing and Computation al Science. Graduates are expected to succeed in a career in Software Engineering, Computer Scientists, High Performance Computing Specialists, Computational Specialists, Artificial Intelligence/Machine Learning Specialists and Data Scientists.

A computer science graduate will have the fundamental knowledge and skills of a software engineering graduate, with an emphasis on developing their own tools, frameworks, and required algorithms. In addition, a Computer Science graduate will also be able to apply state- of-the-art computer science methods in Algorithms, Fault-tolerant Design, Code Optimization, and High-performance Computing. Because of the rapid pace of change in the computing field, Computer Science graduates must be life-long learners to maintain their knowledge and skills within their chosen discipline.

CAREER OPPORTUNITIES

- Computer Scientists
- Computational Specialists
- Software Engineers
- Academics
- High Performance Computing Specialists
- AI/ML Specialists
- Data Scientists
- Researchers

ENTRY REQUIREMENTS

Minimum 2 “C” passes and 1 “S” pass in G.C.E. A/L (Sri Lanka) in the Physical Science Stream (covering Combined Mathematics, Physics and Chemistry) in one and the same sitting or Minimum 2 “B” passes and 1 “C” pass in G.C.E A/L Cambridge or Edexcel (covering Mathematics, Physics and Chemistry) in one and the same sitting, AND pass the special Aptitude Test & Interview conducted by SLIIT Faculty of Computing.

YEAR ONE

SEMESTER 01

SE1012	Programming Methodology	03
IE1004	Computational Thinking	04
IE1014	Engineering Mathematics - I	03
SE1022	Discrete Mathematics	03
SE1032	Communication Skills	03

SEMESTER 02

IE1024	Computer Organization and Architecture	03
IE1034	Engineering Mathematics - II	03
IE1044	Digital Electronics	03
SE1042	English for Academic Purposes	03
SE1052	Data Structures and Algorithms	04

YEAR TWO

IE2004	Computer Networks	03
SE2012	Object Oriented Analysis and Design	04
IE2014	Circuit Theory	03
IE2024	Probability & Statistics	03
SE2032	Database Management Systems	03
IE2034	Analog Electronics	03
IE2044	System Modelling and Prototyping	03
IE2064	Advanced Computer Organization & Architecture	04
IE2074	Control Theory	03
IE2084	Communication Technologies	03

YEAR THREE

IE3004	Digital Systems Design	03
IE3014	Professional Skills	03
IE3034	Control Systems Engineering	04
IE3054	Digital Signal Processing	03
IE3064	Embedded Systems Engineering	04
IE3044	Design Project	03
SE3012	Industrial Economics and Management	03
IE3024	Advance Mathematics	03
SE3072	Industrial Training*	06

YEAR FOUR

IE4004	Research Project (Compulsary)	04
IE4054	Information Security (Compulsary)	04
SE4022	Machine Learning (Elective)	03
IE4044	Biological Inspired systems (Elective)	03
IE4034	Real Time Operating Systems (Elective)	03
IE4014	Parallel & Distributed Computing (Elective)	03
IE4104	Advanced Software Engineering (Elective)	03
IE4114	Intelligent Systems (Elective)	03

Select 03 Electives

IE4004	Research Project	
IE4064	Instrumentation and control (Elective)	08
IE4074	Interactive system design (Elective)	03
IE4084	Virtualization & Cloud Computing Technologies (Elective)	03
IE4094	Robotics (Elective)	03
SE4062	Image Processing and Computer Vision (Elective)	03
SE4072	Deep Learning (Elective)	03

*** Elective Module offerings are subject to annual review and may not be available in all years**