Australian College of Business and Technology

Advanced Diploma of Computer Science

Major in Software Engineering | Major in Cyber Security

Course Name	**Advanced Diploma of Computer Science**
Pathway option	BSc (Hons) Informational Technology & Business Information Systems (Top Up) degree at MDX, UK Bachelor of Computer Science (Software Engineering)/ Bachelor of Science (Cyber Security) Degree at any University in Australia
Course Mode/Duration	Full Time – Two Years
Location	Colombo / Kandy

The ACBT is an approved Tertiary Level Education institution by the Tertiary and Vocational Education Commission established under TVEC Act No. 20 of 1990 and the Development Plan published in the extraordinary gazette notification No. 887/8 dated 7th September 1995.

Introduction

The Advanced Diploma of Computer Science major in Software Engineering / Cyber Security program produces up-to-date knowledge in programming and systems development, as well as current abilities in specialized technical software development. The Advanced Diploma in Computer Science's cutting-edge curriculum is specifically developed to improve the practical skills and knowledge of candidates who want to achieve a job-oriented certificate and meet the expectations of the evolving ICT industry on both a local and worldwide level. The Advanced Diploma in Computer Science, with a focus on Software Engineering/Cyber Security, was created in accordance with the Sri Lanka Qualification Framework (SLQF), and is aimed at students who have completed the GCE (A/L) test. The suggested program is on par with SLQF level 4 and NVQ Levels 6 according to the Sri Lanka Qualifications Framework. It allows students to pursue SLQF 5 or NVQ Level 7 studies.

An overview of the program

The Advanced Diploma in Computer Science consists of 16 units, each of which is worth 15 credits. In order to receive the Advanced Diploma, students must complete the Advanced English and Internship units in addition to the 16 mandatory units.

Program Learning Outcomes

- Apply broad knowledge of concepts, principles and techniques in the discipline of computer science, including computational thinking and the storage, processing and communication of data.
- Apply discipline knowledge, problem solving and creative thinking skills to anticipate challenges and produce solutions to computer science problems.
- Demonstrate technological literacy by finding, evaluating and using relevant tools and information from a range of sources.
- Work collaboratively and demonstrate initiative on complex computer science projects.
- Demonstrate independent and ongoing learning in the area of computer science to ensure continued relevance of skills and knowledge.
- Communicate computer science knowledge and ideas clearly and consistently to technical and non-technical audiences.
- Interpret and analyze complex computer science problems using systems thinking, design thinking and computational thinking.

Possible future job titles after completing the Program

Software Engineer, Business Analyst, UI Engineers, Software Architect Project, Manager Business Analytics, Security Analyst, Security Engineer, Security Architect, Architect-Security, Forensics Investigator, Network Security Engineer, IT Auditor, Information Assurance Engineer

Academic Requirements for Course Completion

No of Hours/ Credits	2400 Hours / 240 credits
Additional course rules	To progress in the Advanced Diploma of Computer Science program, students must successfully complete all eighteen (18) units with an average of 50 percent per unit and an overall score of 50 percent. 1) Students who intend to continue their studies at a higher level must pass the **Post Entry Language Test (PELT),** which is administered by the English Department at ACBT or Cambridge Advanced English (C1). 2) Students must complete an advanced English unit with or prior to completing the Advanced Diploma of Computer Science program.

Course Structure

NO.	Code	Course units	Credits	Status
Semester 1				
1	CSI1101	Programming Principles	15	Core-Required
2	CSI1102	Mathematics for Computing	15	Core-Required
3	CSI1103	Professional Science Essentials	15	Core-Required
4	CSI1104	System Analysis and Design	15	Core-Required
Semester II				
5	CSI1205	Computer Security	15	Core-Required
6	CSI1206	Networking	15	Core-Required
7	CSI1207	Operating System	15	Core-Required
8	CSI1208	Database Management System	15	Core-Required
9	ELE1209	Advanced English	00	Core-Required
Total Credits of semester 1 & II			**120**	
Semester III				
10	CSI2110	Data Structures	15	Core-Required
11	CSI2111	IT Security Management	15	Core-Required
12	CSI2112	Project Methods and Professionalism	15	Core-Required
13	CYB2113	Cryptography	15	Core-Optional
14	SOF2114	Fundamentals of Software Engineering	15	Core-Optional
Semester IV				
15	CSI2215	Intelligence System	15	Core-Required
16	CSI2216	Distributed System	15	Core-Required
17	CSI2217	Object Oriented Programming with C++	15	Core-Required
18	SOF2218	Application Development	15	Core-Optional
19	CYB2219	Computer Forensics	15	Core-Optional
20	CSI2220	Internship project*	00	Core-Required
Total Credits of semester III & IV			**120**	
Total Credits of the program			**240**	

Units List Majoring in Software

Code	Course units
CSI1101	Programming Principles
CSI1102	Mathematics for Computing
CSI1103	Professional Science Essentials
CSI1104	System Analysis and Design
CSI1205	Computer Security
CSI1206	Networking
CSI1207	Operating System
CSI1208	Database Management System
ELE1209	Advanced English**

Unit List Major in Cyber Security

Code	Course units
CSI1101	Programming Principles
CSI1102	Mathematics for Computing
CSI1103	Professional Science Essentials
CSI1104	System Analysis and Design
CSI1205	Computer Security
CSI1206	Networking
CSI1207	Operating System
CSI1208	Database Management System
ELE1209	Advanced English**

CSI2110	Data Structures
CSI2111	IT Security Management
CSI2112	Project Methods and Professionalism
SOF2114	Fundamentals of Software Engineering
CSI2215	Intelligence System
CSI2216	Distributed System
CSI2217	Object Oriented Programming with C++
SOF2218	Application Development
CSI2220	Internship project*

CSI2110	Data Structures
CSI2111	IT Security Management
CSI2112	Project Methods and Professionalism
CYB2113	Cryptography
CSI2215	Intelligence System
CSI2216	Distributed System
CSI2217	Object Oriented Programming with C++
CYB2219	Computer Forensics
CSI2220	Internship project*

***A minimum of 400 hours of practical training should be completed.**

****ELE1209 – This unit may be taken at any point during the Advanced Diploma of Computer Science program and should be completed prior to program completion. After completing this unit, students are recommended to sit for the Cambridge Advanced English (C1) examination.**

Evaluation of Course Units

- Written exams during and at the end of the semesters Project reports and practical assignments
- In-Class assignments
- Viva Voce examination at the end of the programs
- Oral and written presentations

Expected study time per year

Activity	Units	Hours	Weeks	Semester	Total Hours	Overall percentage of total
Scheduled teaching including lecturer assisted Practical's, Tutorials and other class room Assessments	4	4	13	2	416	50%
					416	
Min. Supervised Consultation Hours	4	1	13	2	104	50%
Min Homework hours	4	1	13	2	104	
Min online learning hours	4	1	13	2	104	
					312	
Total					**728**	

Grading System

Range of Marks	Grade	Grade Point Value
85 – 100	A+	4.00
70 – 84	A	4.00
65 – 69	A-	3.70
60 – 64	B+	3.30
55 – 59	B	3.00
50 – 54	B-	2.70
45 – 49	C+	2.30
40 – 44	C	2.00
35 – 39	C-	1.70
30 – 34	D+	1.30
25 – 29	D	1.00
00 – 24	E	0.00

Grading system is based on the SLQF (Sri Lankan Quality Framework).

Grade Point Average

Grade Point Average (GPA) is the credit-weighted arithmetic mean of the Grade Point Values, i.e., the GPA is determined by dividing the total credit-weighted Grade Point Value by the total number of credits. GPA shall be computed to the first decimal place.

Criteria for the Award of the Advanced Diploma of Computer Science

Pass

A student registered for the Advanced Diploma of Computer Science will be awarded the Advanced Diploma in Computer Science if he/she satisfies all the following conditions:

(i) Obtains grades B- or better in all course units,

(ii) Has a minimum cumulative GPA of 2.7 from all course units
and

(iii) Completes the relevant requirements within a period of four academic years.

Distinction Pass

A student registered for the Advanced Diploma of Computer Science will be awarded the Advanced Diploma of Computer Science with distinction if he/she satisfies all the following conditions:

(i) Obtains grades A or better in all course units,

(ii) Has a minimum cumulative GPA of 4.0 from all course units,
and

(iii) Completes the relevant requirements within a period of four academic years.