



Advanced Certificate in Computer Science (ACCS500)

**FACT
SHEET**

Welcome to CIAFS

Advanced Certificate in Computer Science

The Advanced Certificate in Computer Science is designed for working technology professionals and Certificate-in-Computer-Science graduates who are ready to move beyond the basics and into the engineering competencies that drive promotion and salary growth in the technology sector.

The six-course curriculum covers software engineering principles, advanced programming techniques, the theory of computation, human-computer interaction, mobile application development, and machine learning. Students develop the analytical and design skills that distinguish capable developers from team leaders, and they gain hands-on experience with the tools and methodologies used by leading technology employers.

Graduates are positioned for software developer, mobile developer, and junior machine learning roles, and can progress to the Diploma in Computer Science



Modules

* Prescribed textbooks, must be obtained by students at their own cost prior to the commencement of their studies

Module Codes	Description	Credits	Semester
ACCS501	Software Engineering	3	1
ACCS502	Advanced Programming	3	1
ACCS503	Theory of Computation	3	1
ACCS504	Human-Computer Interaction	3	2
ACCS505	Mobile Application Development	3	2
ACCS506	Machine Learning	3	2



Assessment

- Continuous assessment (assignments, projects, and quizzes)
- Summative assessment (tests and examinations)
- No practical or workplace-based component

Outcomes

Upon completion of the qualification, graduates will be able to:

- Apply software engineering methodologies including requirements analysis, design patterns, and quality assurance to real projects.
- Develop advanced programs using contemporary languages, frameworks, and best practices for production-grade software.
- Design user interfaces and user experiences that meet professional usability and accessibility standards.
- Build, train, and evaluate machine learning models for classification, regression, and clustering problems.
- Develop functional mobile applications for current iOS and Android platforms.
- Reason about the theoretical foundations and computational limits of algorithms.

Admission Requirements

- US High School Diploma, GED, or international equivalent (NQF Level 4 or higher)
- Recognition of Prior Learning (RPL) in line with CIAFS institutional policy
- English language proficiency: IELTS 5.5, TOEFL iBT 60, or equivalent for non-native English speakers
- Mature applicants (21+) with relevant work experience welcomed via portfolio review

Purpose of the Qualification

To provide students with:

- Build engineering-level competence in software development, design, and quality.
- Provide a structured introduction to machine learning that employers increasingly expect of mid-level developers.
- Develop the mobile and user-experience skills that distinguish modern developer roles.
- Open progression to the Diploma in Computer Science and to bachelor's-level study.



Articulation Options

Graduates can articulate horizontally or vertically into:

- Diploma in Computer Science
- Advanced Certificate in Cybersecurity (cross-track entry)
- Bachelor's degree completion programs in Computer Science

Career Opportunities

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Graduates may pursue roles such as:

- Software Developer
- Mobile Application Developer
- Junior Machine Learning Engineer
- Front-End Developer
- UX/UI Designer