

Diploma of Science (Computing/IT) (Year 2)

This program introduces you to the disciplines of computer science, software engineering, computer security, information technology and other emerging fields. All computing programs at ECU are developed in consultation with the IT industry and have received the Australian Computer Society's highest level of accreditation (Level 1). This program is taught on ECU's state-of-the-art Joondalup Campus West.

The program consists of 8 units of study and can be completed over 2 or 3 trimesters. Students who complete the ECC Diploma of Science (Computing/IT) (Year 2) will receive 8 units (120 credit points) advanced standing, the equivalent of the first year, in the respective Bachelor degree at ECU. A minimum of 50 percent pass in all units is required for progression to ECU.

Entry into 2 nd year of your ECU degree	Number of unit exemptions granted towards ECU degree	Duration at ECU after Diploma (Year 2)	Units to enrol at ECC
Bachelor of Computer Science majoring in: <ul style="list-style-type: none"> • Cyber Security • Software Engineering 	8 units	2 years	Core for all majors: <ul style="list-style-type: none"> • SCI1125D – Professional Science Essentials • MAT1252D – Mathematics for Computing • CSI1241D – Systems Analysis • CSP1150D – Programming Principles • CSG1105D – Applied Communications • ENS1161N – Computer Fundamentals • CSG1207D – Systems and Database Design • CSI1101D – Computer Security
Bachelor of Information Technology	8 units	2 years	
Bachelor of Science (Cyber Security)	8 units	2 years	
International students must study a full-time study load. ECC reserves the right to cancel classes due to insufficient demand. Timetable clashes may be unavoidable.			

UNIT DESCRIPTORS

SCI1125D – Professional Science Essentials

This unit will introduce students to the skills required of professional scientists, with a special focus on effective communication. These professional skills include techniques of accessing, evaluating and presenting scientific information. Written, visual and oral presentation skills for scientific and general audiences will be developed through the analysis of topical scientific issues. This unit will prepare students to develop careers in the science discipline of choice.

MAT1252D – Mathematics for Computing

This unit presents fundamental topics in mathematics that are essential to computing studies including propositional and predicate calculus, Boolean algebra, set theory, computer arithmetic and number systems in computing. It also provides an introduction to matrix algebra with applications to computing and cryptography.

CSI1241D – Systems Analysis

This unit develops a student's understanding of the components of systems analysis: definition of a system, the role of and context of systems analysis, interfacing with the user; the life cycle of a management information system from the

feasibility study through to the post-implementation audit. Applying skills by fact gathering, interviewing, presenting, group working, documenting an existing system; analysis techniques involving use cases, state diagrams, data modelling, data from diagrams, data dictionaries, decision tables, web page, screen and report design.

CSP1150D – Programming Principles

This unit introduces students to the principles of programming, including data manipulation, control structures, and abstraction. The unit focuses upon developing the ability to design and implement programs to solve problems

CSG1105D – Applied Communications

This unit introduces students to current and proposed telecommunications and networking infrastructures and their application in business and communications services. With a primary focus on the Internet and the World Wide Web, students examine in detail the principles, processes and technologies associated with data communications and computer networking, applications of the major carriage media, communications standards and emerging broadcast and narrowcast technologies based on communications channels.

ENS1161N – Computer Fundamentals

(Pre-requisite: MAT1252D – Mathematics for Computing)

This unit introduces the fundamental architecture and operating principles of digital computer system. Students will learn how modern computers are organised and operated, and how they can be programmed at an assembly (machine) language level, as well as using higher level languages, and the role of operating systems in this. Students will also learn fundamental concepts related to the interfacing of peripheral components to computer systems, including memory and secondary storage, and explore different types of computer systems including an overview of virtualisation and cloud technologies.

CSG1207D – Systems and Database Design

This unit introduces students to the concepts of relational databases, including database design via normalisation and entity-relationship modelling in order to solve problems. It explores the use of Structured Query Language (SQL) to create, populate and administer relational databases and to perform complex queries upon the data inside them.

CSI1101D – Computer Security

The unit is an introduction to computer security which serves as a preliminary unit to prepare students for various advanced studies within their respective courses. The unit focuses on understanding the potential threats and vulnerabilities geared towards a variety of computer-related assets and examines a wide range of countermeasures to overcome weaknesses and minimise threats.

Methods of Assessment at ECC

Methods of assessment may differ depending on the program and subjects you choose. Most subjects will be assessed through a combination of written examinations and assignments, essays, presentations, seminars and tutorial participation. Some coursework will include group-based projects and practical activities. At the beginning of each unit, students are given an outline that includes due dates for the completion of assignments. Students who fail to meet these submission deadlines may be penalised even though the work was completed. Attending all classes is essential in order to be successful at ECC. **Flyer is current as of 13 February 2023.**