School administrators and Heads of Learning Area and Teachers of Computer Science ATAR Year 11 are requested to note for 2025 the following minor syllabus changes. The syllabus is labelled 'For teaching from 2025'.

Computer Science | ATAR Year 11 | Summary of minor syllabus changes for 2025

The content identified by ~~strikethrough~~ has been deleted from the syllabus and the content identified in *italics* has been revised in the syllabus for teaching from 2025.

Unit 1

Programming

Programming skills and concepts

Knowledge

- modular coding using functions, ~~parameters and arguments~~

  - scope of variables (Global, Local)

  - *parameters and arguments*

Skills

- use modular coding using functions, ~~parameters and arguments~~

  - scope of variables (Global, Local)

  - *parameters and arguments*

- apply, using pseudocode and a programming language, the following data ~~structures~~ *structure*:

  - one-dimensional array

Good programming practice

Knowledge

- Framework for development

  - investigate

    o problem description

    o define requirements

    o development schedule*s including Gantt charts*

  - develop

    o develop and debug code

    o unit testing ~~and use of live data~~

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Ethical and legal implications of software development

Knowledge

- concepts associated with piracy and copyright, including:
    - intellectual property
        - plagiarism in relation to the acknowledgement of code
        - Australian copyright laws
        - *purpose of software licensing*
        - *open source*
        - *proprietary*
        - ~~software licensing~~

Networking communications

Network components

Knowledge

- the function of networking components at different layers of TCP/IP model
    - transmission media (UTP, fibre optics, wireless)
    - *modem*
    - router
    - switch
    - wireless access point
    - firewall

Network performance

Skills

- create *logical* network diagrams using the CISCO network diagrammatic conventions to represent network topologies for LAN, WLAN and WAN

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Unit 2

Cyber security

Network security

Knowledge

- authentication
  - characteristics of strong passwords
  - organisational approach to password policies
  - password policies impact on data security
  - two-factor authentication
  - biometrics
- encryption
  - purpose of encryption
  - *public key (asymmetric) encryption*
  - *symmetric encryption*
  - ~~public vs private key encryption~~

Network threats

Knowledge

- distinguish between the different methods used to compromise the security of a system:
  - social engineering (phishing)
  - denial of service
  - back door
  - IP spoofing
  - SQL injection
  - man-in-the-middle
  - cross-site scripting
  - types of malware
    - *viruses*
    - *worms*
    - *Trojan horses*
    - *spyware*
    - *adware*
    - *ransomware*

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Security frameworks

Knowledge

- *The CIA Triad model of security analysis*
  - *Confidentiality*
  - *Integrity*
  - *Availability*

- *The AAA framework for securing systems*
  - *Authentication*
  - *Authorisation*
  - *Accounting*

Skills

- *Use the CIA Triad to analyse security threats and incidents*

- *Use the AAA framework for security analysis and auditing*

Data management

Data modelling

Skills

- analyse ER diagrams written in crow's foot notation (3 to 6 tables)

- create accurate ER diagrams (*minimum of* ~~3 to 4~~ four tables) using crow's foot notation

- create a data dictionary

- resolve many to many (M:N) relationship

Database creation and manipulation

Skills

- use a RDBMS to create and manipulate a relational database with a minimum of three tables

- use SQL to manipulate a database including:
  - SELECT
  - INSERT
  - DELETE
  - UPDATE
  - ORDER BY
  - inner join*s* ~~across two tables~~
  - aggregate functions (COUNT, SUM, AVG, MAX, MIN)

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Appendix 1 – Grade descriptions Year 11 ~~(provisional)~~

A	**Knowledge and understanding** Accurately uses computer science terminology and ~~describes~~ *explains* processes and concepts in context and with justification.

B	**Data management skills** Constructs appropriate entity relationship diagrams reflecting system requirements, including relevant use of diagrammatic conventions, relationships, cardinality, attributes and primary and foreign keys. *Accurately* interprets and explains entity relationship diagrams. Applies normalisation to the third normal form to accurately model a simple database solution. Constructs appropriate multi-table relational databases accurately reflecting system requirements and using appropriate queries to extract relevant data.

C	**Knowledge and understanding** Uses computer science terminology and ~~describes~~ *outlines* processes and concepts.
	Cyber security and networking ~~Identifies~~ *Outlines* network threats and security solutions. Designs limited network diagrams using conventions, showing connections between devices. Identifies network design decisions that have an effect on performance issues. Interprets network diagrams with varying success.
	Data management skills Constructs entity relationship diagrams, with *minor* errors, that attempt to reflect system requirements. Entity relationship diagrams use diagrammatic conventions, relationships, cardinality, attributes, and primary and foreign keys. *Accurately* interprets entity relationship diagrams. Attempts to apply normalisation to third normal form to model a database solution. Constructs a multi-table relational database, reflecting system requirements and using simple queries to extract data.

D	**Cyber security and networking** *Inconsistently identifies network threats and security solutions*. Attempts to design limited network diagrams but uses ~~with~~ incorrect conventions and logic.