

Applied Computing

Units 1-2

Applied Computing facilitates student-centred learning that enables students to build capabilities in critical and creative thinking, and to develop communication and collaboration, and personal, social and information and communications technology (ICT) skills. Students are provided with practical opportunities and choices to create digital solutions for real-world problems in a range of settings.

UNIT 1

Students explore a range of database software, data collection methodologies and visualisation types, and the use of programming languages in digital systems.

LEARNING ACTIVITIES

Explicit instruction of theory and use of technology, textbook exercises, problem-solving and modelling, application of skills to real-world problems.

KEY SKILLS REQUIRED

Data collection, storage and manipulation, data visualisation, data analysis and interpretation, communication.

ASSESSED TASKS

Formative tests for each chapter, a summative SAC for outcome 1 and a folio of work for outcome 2.

UNIT 2

Students work collaboratively to identify an area of interest and design an innovative solution, then explore the threats and vulnerabilities to data in networks.

LEARNING ACTIVITIES

Explicit instruction of theory and use of technology, textbook exercises, problem-solving and modelling, application of skills to real-world problems, and project-based inquiry.

KEY SKILLS REQUIRED

Approaches to problem-solving, development of reasoning and logic, project management, ethics.

ASSESSED TASKS

Formative tests for each chapter, written report SAC for outcome 1, case study SAC for outcome 2.

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Units 3-4 (Data Analytics)

Technology continues to evolve rapidly, providing opportunities for enterprising individuals to create new technologies and innovative uses for existing technologies. This study equips students with the knowledge and skills required to adapt to a dynamic technological landscape, including the ability to identify emerging technologies, envisage new uses for digital technologies and consider the benefits that these technologies can bring to society at a local and at a global level.

UNIT 3

In this unit students apply the problem-solving methodology to identify and extract data through the use of software tools such as database, spreadsheet and data visualisation software to create data visualisations or info-graphics. Students develop an understanding of the analysis, design and development stages of the problem-solving methodology.

LEARNING ACTIVITIES

Explicit instruction of theory and use of technology, textbook exercises, problem-solving and modelling, application of skills to real-world problems.

KEY SKILLS REQUIRED

Data collection, storage and manipulation, data visualisation, data analysis and interpretation, communication.

ASSESSED TASKS

Key topic tests, project-based SAC for outcome 1, portfolio SAT for outcome 2.

UNIT 4

In this unit students focus on determining the findings of a research question by developing info-graphics or dynamic data visualisations based on large complex data sets and on the security strategies used by an organisation to protect data and information from threats.

LEARNING ACTIVITIES

Explicit instruction of theory and use of technology, textbook exercises, problem-solving and modelling, application of skills to real-world problems.

KEY SKILLS REQUIRED

Approaches to problem-solving, development of reasoning and logic, project management, ethics.

ASSESSED TASKS

Key topic tests, continuation of the portfolio SAT for outcome 1, test style SAC for outcome 2.

VCAA ASSESSMENT – The overall Study Score will consist of:

School Assessed Coursework (20%)

School Assessed Task (30%)

Examination in November (50%)