Course

Software Engineering

NESA Course Code:
Preliminary 11345
HSC 15365

2 units for each of Preliminary and HSC year.
Board Developed Course.

DOES count in the 6 units of the Board Developed Courses required for the HSC.

DOES count towards an ATAR.

Course costs

Yes

Success Criteria (what skills and aptitudes you need to have for success in this subject)

Technical skills
Social awareness
Project management
Thinking and problem solving skills

Course Description

The course is recommended for students looking to pursue further study in computer science and related fields. The Preliminary course provides students with opportunities to develop and apply an understanding of the fundamental elements involved in creating software.
The HSC course builds on the Preliminary course and provides students with opportunities to extend their knowledge, understanding and skills in the development of software. A major software engineering project provides students with the opportunity to further develop project management skills.

Main Topics Covered

Preliminary 120 hours	HSC 120 hours
Programming Fundamentals 40% Software Development Designing algorithms Data for software engineering Developing solutions with code **The Object-Orientated Paradigm 30%** Understanding OOP Programming in OOP **Programming Mechatronics 30%** Mechatronic hardware & software Designing control algorithms Building mechatronic systems	**Secure Software Architecture 25%** Design software Developing secure code Impact of safe & secure software development **Programming for the Web 25%** Data transmission using the Web Designing web applications **Software Automation 25%** Algorithms in Machine Learning (ML) Programming for automation Significance and impact of ML & AI **Software Engineering Project 25%**.

Particular Course Requirements:

Practical experience should occupy a minimum of 20% of the Preliminary course, and a minimum of 25% of the HSC course. There are software and course specifications.

Assessment for the HSC Course

External Assessment	Weighting	Internal Assessment	Weighting
A two- and half-hour examination using a computer. **Section I** Objective response (stimulus or short answer responses) **Section II** Short answer or stimulus responses	30 70	Research task Skills task Major Project Trial Examination	20 20 30 30

	100%		100%