**Philip Feain –** Hello and welcome to the VCE Applied Computing Study Design 2025-2028 on-demand video. The purpose of this video is to support teachers with understanding the VCE Applied Computing Study Design for 2025-2028. The purpose of this presentation is to: provide an overview of the VCE Applied Computing Study Design, discuss the major changes to each unit, look at the outcome statements and to look at the assessment tasks.

In the following slides we'll have an overview of the VCE Applied Computing Study Design. The terms used in this study have been updated and refreshed. New terms have been added and others updated. Terms have also been aligned to the key knowledge throughout the study design. The problem-solving methodology has had a slight update and it's appearance refreshed. The Unit application column on the right has been updated to show where each of the activities fit into the Units of Applied Computing, Data Analytics and Software Development.

Over the next few slides, we'll look at Unit 1 Applied Computing. There have been several major changes to Unit 1 Applied Computing. In Outcome 1 SQL has been added and the assessment tasks have been updated. In Outcome 2 emerging trends and object-oriented programming have been added. Project management has been removed and the assessment tasks have been updated. There have also been some other minor changes, edits and updates to Unit 1.

The outcome statement for Unit 1 Outcome 1 has been updated. Students should be able to interpret teacher-provided solution requirements and designs, analyse data and develop data visualisations to present findings. The key knowledge and key skills can be seen in the background to Unit 1 Outcome 1 Applied Computing video. Assessment tasks have been updated and there are now suitable assessment tasks listed for Unit 1 Outcome 1. Teachers can choose from the following: A folio of exercises to demonstrate the learning of database, spreadsheet, and data visualisation software tools. A solution including the use of database, spreadsheet, and data visualisation software tools in response to teacher-provided solution requirements and designs. And a personal portfolio to showcase the development of databases, spreadsheets and data visualisations.

The outcome statement for Unit 1 Outcome 2 has been updated. Students should be able to interpret teacher-provided solution requirements to design and develop a software solution using an object-oriented programming language. The key knowledge and key skills can be seen in the background to Unit 1 Outcome 2 Applied Computing video. There are now suitable assessment tasks listed for Unit 1 Outcome 2. Teachers can choose from the following: a folio of exercises to demonstrate the learning of an object-oriented programming language. A software solution that includes the designs, solution and a testing table in response to teacher-provided solution requirements.

The creation and maintenance of code repositories to track the progression of students' learning using platforms such as GitHub. And a software solution developed in response to a teacher-provided problem solving challenge, presented as a hackathon.

Over the next few slides, we'll look at Unit 2 Applied Computing. There have been several major changes to Unit 2 Applied Computing. In Outcome 1 the un sustainable development goals, AI and frameworks have been added. Assessment tasks have been updated. In Outcome 2 cyber security incidents, emerging trends in AI, cryptography and frameworks have been added and assessment tasks have been updated. There have also been some other minor changes, edits and updates to Unit 2.

The outcome statement for Unit 2 Outcome 1 has been updated. Students should be able to, in collaboration with other students, identify a problem, need or opportunity to analyse, design, develop and evaluate an innovative solution. The key knowledge and key skills can be seen in the Background to Unit 2 Outcome 1 Applied Computing video. There are now updated assessment tasks listed for Unit 2 Outcome 1. Teachers can choose from the following: An innovative solution that includes an analysis, designs, the development of a proof of concept/prototype/ product and an evaluation. A presentation of an innovative solution. A written report that documents the development of an innovative solution and an annotated visual report that documents the development of an innovative solution. The outcome statement for Unit 2 Outcome 2 has been updated.

Students should be able to respond to a teacher-provided case study to examine the cyber security incident or a network vulnerability, evaluate the threats to a network, and propose strategies to protect the security of data and information on the network. The key knowledge and key skills can be seen in the background to Unit 2 Outcome 2 Applied Computing video. We have now updated the assessment tasks listed for Unit 2 Outcome 2. Teachers can choose from the following: A teacher-provided case study with structured questions that investigates a cyber security incident and how it could be prevented in the future and a teacher-provided case study with structured questions that investigates a network, its vulnerabilities and how these could be mitigated.

Over the next few slides, we'll look at Unit 3 Data Analytics. There have been several major changes to Unit 3 Data Analytics. In Outcome 1 emerging trends, SQL and statistical analysis have been added. The assessment task for the SAC has been updated. In Outcome 2 ideation techniques has been added and the assessment task for the SAC has been updated. There have also been some other minor changes, edits and updates to Unit 3. The outcome statement for Unit 3 Outcome 1 has been updated.

Students should be able to interpret teacher-provided solution requirements and designs, extract data from large repositories, manipulate and cleanse data, conduct statistical analysis and develop data visualisations to display findings. The key knowledge and key skills can be seen in the background to Unit 3 Outcome 1 Data Analytics video. The Unit 3 Outcome 1 SAC task will continue to contribute 10 per cent to the study score. The total marks for the SAC task will still total 100 marks.

The assessment task itself involves students responding to teacher-provided solution requirements and designs with the following components: Extract and reference data from large repositories into a database, Query data using databases and SQL, Use spreadsheet functions to manipulate data, statistically analyse data in spreadsheets and develop data visualisations. Task time allocated for the SAC task should be at least 6-10 lessons. The outcome statement for Unit 3 Outcome 2 has been updated. Students should be able to propose a research question, formulate a project plan, collect and prepare data, and generate design ideas and a preferred design for creating infographics and/or dynamic data visualisations.

The key knowledge and key skills can be seen in the Background to Unit 3 Outcome 2 Data Analytics video. The Unit 3 Outcome 2 and Unit 4 Outcome 1 SAC task will still continue to contribute 30 per cent to the study score. The components of the SAC task for Unit 3 Outcome 2 will include: A documented research question and a project plan indicating tasks, times, milestones, dependencies and the critical path and an analysis that defines the requirements, constraints and scope of infographics and/or dynamic data visualisations and a collection of complex data sets that has been referenced and a folio of design ideas and evaluation criteria and detailed design specifications of the preferred design. Time allocated should be at least 8-10 weeks of class time.

Over the next few slides, we'll look at Unit 4 Data Analytics. There have been several major changes to Unit 4 Data Analytics. In Outcome 1 statistical analysis has been added. The assessment task for the SAT has been updated. In Outcome 2 emerging trends in cryptography has been added and the assessment task for the SAC has been updated. There have also been some other minor changes, edits and updates to Unit 4. The outcome statement for Unit 4 Outcome 1 has been updated. Students should be able to develop and evaluate infographics and/or dynamic data visualisations that meet requirements and assess the effectiveness of the project plan.

The key knowledge and key skills can be seen in the Background to Unit 4 Outcome 1 Data Analytics video. The components of the SAT task for Unit 4 Outcome 1 will include: Infographics and/or dynamic data visualisations to present findings in response to a research question and an evaluation of the efficiency and effectiveness of infographics and/or dynamic data visualisations, an assessment of the effectiveness of the project plan in monitoring project progress in one of the following: a written report or an annotated visual plan. Time allocated should be at least 8 weeks of class time. The outcome statement for Unit 4 Outcome 2 has been updated. Students should be able to respond to a teacher-provided case study to analyse the impact of a data breach on an organisation, identify and evaluate threats, evaluate current security strategies and make recommendations to improve security strategies.

The key knowledge and key skills can be seen in the background to Unit 4 Outcome 2 Data Analytics video. The Unit 4 Outcome 2 SAC task will continue to contribute 10 per cent to the study score. The total marks for the SAC task will still total 100 marks. The assessment task itself involves the student's performance being assessed using one of the following: structured questions or a reported in written format or a report in multimedia format. The case study scenario needs to enable: an analysis of the breach, an evaluation of the threats and recommendations to improve security strategies. Task time allocated for the SAC task should be 100-120 minutes.

Over the next few slides, we'll look at Unit 3 Software Development. There have been several major changes to Unit 3 Software Development. In Outcome 1 emerging trends, object-oriented programming and errors have been added. The assessment task for the SAC has been updated. In Outcome 2 a brief, object-oriented programming, file management and ideation techniques have been added and the assessment task for the SAT has been updated. There have also been some other minor changes, edits and updates to Unit 3. The outcome statement for Unit 3 Outcome 1 has been updated. Students should be able to interpret teacher-provided solution requirements and designs and use appropriate features of an object-oriented programming language to develop working software modules.

The key knowledge and key skills can be seen in the background to Unit 3 Outcome 1 Software Development video. The Unit 3 Outcome 1 SAC task will continue to contribute 10 per cent to the study score. The total marks for the SAC task will still total 100 marks. The assessment task itself involves students responding to teacher-provided solution requirements and designs, to develop four working modules with increasing complexity of programming skills.

Students will develop the following four components: Module 1: Simple calculations using arithmetic, logical and conditional operators. Module 2: Reading and writing files. Module 3: Sorting and searching with functions or methods. And Module 4: Classes and objects. At least two modules must include a GUI. All modules must include testing. Task time allocated should be at least 8-14 lessons. The outcome statement for Unit 3 Outcome 2 has been updated. Students should be able to document a problem, need or opportunity, formulate a project plan, document an analysis and generate design ideas and a preferred design for creating a software solution.

The key knowledge and key skills can be seen in the Background to Unit 3 Outcome 2 Software Development video. The Unit 3 Outcome 2 and Unit 4 Outcome 1 SAT task will still continue to contribute 30 per cent to the study score. The components of the SAT task for Unit 3 Outcome 2 will include: a brief outlining the proposed solution and a project plan indicating tasks, times, milestones, dependencies and the critical path. And analytical tools that depict the interactions between systems, users, data and networks. And an analysis that defines the requirements, constraints and scope of a solution in the form of a software requirements specification. And a folio of design ideas and evaluation criteria and detailed design specifications of the preferred design. Time allocated should be at least 8-10 weeks of class time.

Over the next few slides, we will look at Unit 4 Software Development. There have been several major changes to Unit 4 Software Development. In Outcome 1 innovative approaches to software development and alpha and beta testing have been added. The assessment task for the SAT has been updated. In Outcome 2 threat modelling principles and frameworks have been added and the assessment task for the SAC has been updated. There have also been some other minor changes, edits and updates to Unit 4. The outcome statement for Unit 4 Outcome 1 has been updated. Students should be able to develop and evaluate a software solution that meets requirements and assess the effectiveness of the project plan.

Key knowledge and key skills can be seen in the background to Unit 4 Outcome 1 Software Development video. The components of the SAT task for Unit 4 Outcome 1 will include: a software solution that meets the software requirements specification and preparation and conduction of beta testing and an evaluation of the efficiency and effectiveness of the software solution, an assessment of the effectiveness of the project plan in monitoring project progress in one of the following: a written report or an annotated visual plan. Time allocated should be at least 8 weeks of class time. The outcome statement for Unit 4 Outcome 2 has been updated.

Students should be able to respond to a teacher-provided case study to analyse and organisation's software development practises, identify and evaluate current security controls and threats to software development practises, and make recommendations to improve practises. The key knowledge and key skills can be seen in the Background to Unit 4 Outcome 2 Software Development video. The Unit 4 Outcome 2 SAC task will continue to contribute 10 per cent to the study score. The total marks for the SAC will still total 100 marks. The assessment task itself involves the student's performance being assessed using one of the following: structured questions or a reported written format or a report in multimedia format.

The case study scenario needs to enable: an analysis of the organisation's software development practises, an evaluation of the current security controls and threats and recommendations to improve practises. Task time allocated should be 100-120 minutes.

Thank you for following this presentation. If you have any questions regarding this presentation or the VCE Applied Computing Study Design you can contact Phil Feain, the Digital Technologies Curriculum Manager, at the contact details below.

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