As easy as . . .

VCE IT: Software Development

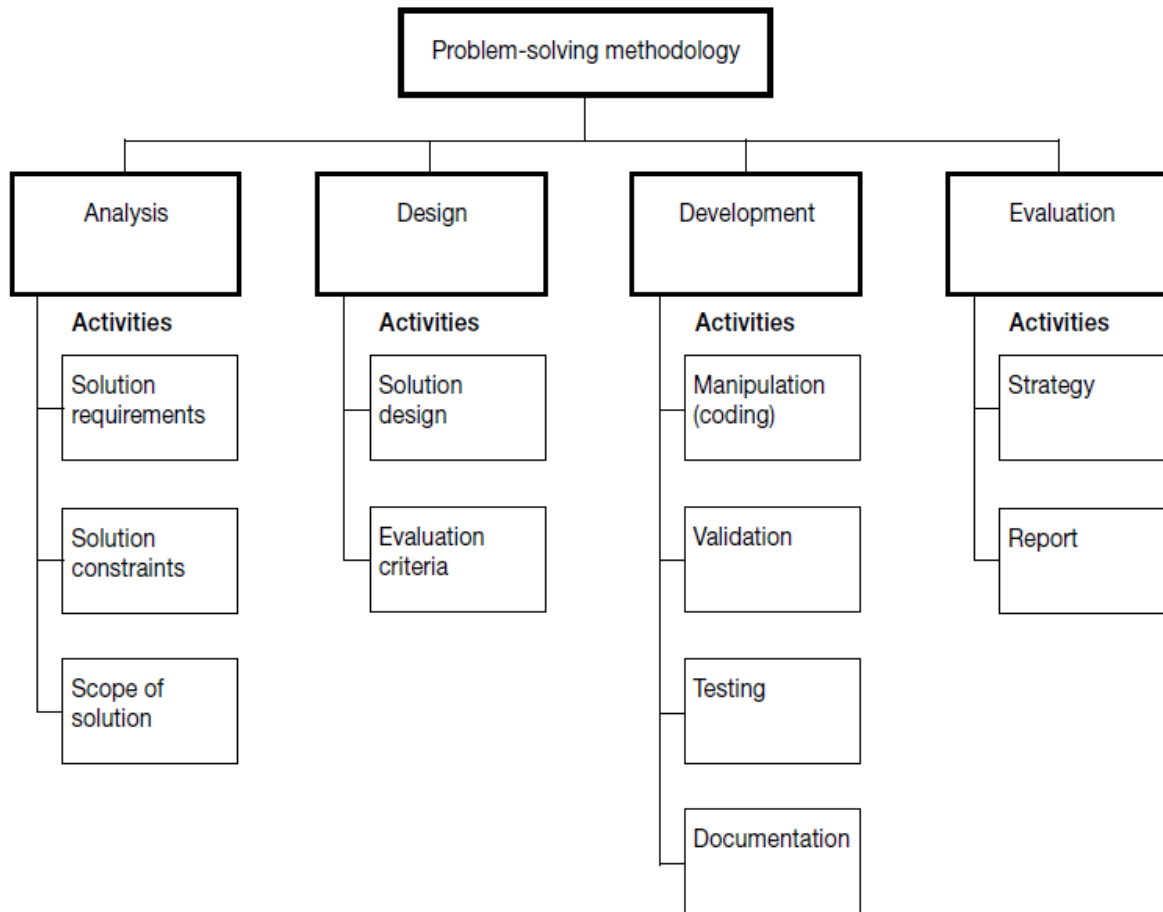**Exam Preparation**

Claudia Graham

What we already know?

- **Exam Date: Thursday 17 November 11.45-2.00pm**
- Section A – 20 Multiple Choice – 20 marks
- Section B – Short Answer – 20 marks
- Section C – Case Study – 60 marks
- The weighting given to each unit and each outcome will be approximately equal across the examination.
- A representative sample of key knowledge and skills
- Exam Specifications
  - http://www.vcaa.vic.edu.au/vcaa/vce/studies/infotech/softwaredevel/IT-softwaredev-samp-w.pdf

What we know from the past?

- Students have in general done well in Section A so to be in top % range greater then 17/20
- Students have found some difficulty providing depth of knowledge in Section B
- Students have averaged 50% for Section C with most finding difficulty with:
  - Algorithm question
  - Evaluation question
- Answers need to apply to the case study
  - generic response should be avoided
  - general terms such as efficiency and effectiveness should be avoided

The Key Concepts!

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The Key Concepts!

- Problem Solving Methodology (all outcomes)
- Networking (all outcomes to varying degrees)
- Programming concepts (U302, U401)

The Key Concepts!

- ## Problem Solving Methodology
  - ### Analysis
    - Project Planning
    - Software requirements specification (SRS)
      - Functional (what the solution is required to do)/Non Functional (attributes the solution should possess) Requirements
      - Constraints
      - Scope – boundaries and benefits
    - UML – UseCase
    - DFD

The Key Concepts!

- Problem Solving Methodology
  - Design
    - Data dictionaries, data structure diagrams, object descriptions
    - Algorithms – only pseudo code
    - Evaluation criteria

The Key Concepts!

- Problem Solving Methodology
  - Development
    - Programming concepts
    - Characteristics of efficient and effective input and output
    - Validation – existence, range and type checking
    - Testing solution
    - Documentation – internal and user

The Key Concepts!

- **Problem Solving Methodology**
  - Evaluation
    - Determining a strategy
      - Timeline
      - Data to be collected and what methods and techniques
      - How the data relates to the criteria – from design stage
    - Reporting the extent to which solution meets the requirements of the user.
    - Evaluate: solution, training, user & support documentation, network and the strategies to manage ethical dilemmas

The Key Concepts!

- Networking
  - Networking overview
  - OSI – physical layer & TCP/IP
  - Mobile computing devices
  - Intranets, internet and VPNs
  - Wired and wireless networks
  - Reliability and maintainability of networks
  - Security of data and network and the testing of security

The Key Concepts!

- Programming Concepts
  - Data types: integer, floating point number, Boolean, character, string
  - Data structures : 1D, 2D arrays, records, files, stacks and queues
  - Handling, managing and organising files : serial & random
  - Searching : binary
  - Sorting : bubble and quick
  - Legal obligations of programmers

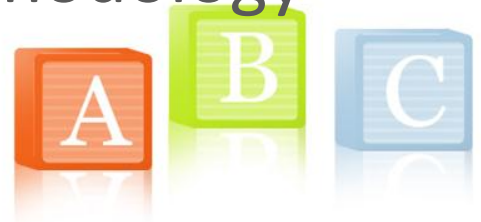# So how do we get students ready?

- A significant majority of the content from Software Development during the period 2007-2010 (and before) can be used to provide appropriate revision for the VCE IT Study Design 2011-2014.

- However….

So how do we get students ready?

- Even though the previous study contained a version of the problem solving methodology the clarity of definition that can be found on pg. 16-18 of the VCE IT Study Design 2011-2014 will need to be considered when using questions from past papers.

- Key terms such as solution requirements, scope and constraints are new to this study, so should be considered when responding to analysis stage questions of the problem solving methodology

So how do we get students ready?

- Changes to the problem solving methodology are of particular concern in Software Development, with the removal of the Systems Development Life Cycle (SDLC) and the sole use of the problem solving methodology. **This has created a solution focus rather then a system focus.**

- Any direct reference to the SDLC in past examinations should be reworded or removed to avoid confusion

So how do we get students ready?

- The removal the SDLC contextual overlay has meant that some topics in the old study design are no longer relevant for example: system change factors, system goals and objectives, selection of hardware to meet needs, changeover methods, etc. these questions are best avoided.

- In general completing 'whole' past papers should only be used after careful consideration, active editing and creative rewording!

So how do we get students ready?

- Practice Exams
    - VITTA – Unit 3 & Unit 4, plus 2 exams
    - Insight
    - CSE/IARTV
    - VCAA Sample questions

    - Review, edit, rewrite – even 2011 papers.

Sample Questions

Example **Question 12 VCAA 2009**

Truss-Tee is establishing the evaluation criteria **for the new system**. **The main system goal** is to efficiently and effectively share the design workload between all the sites. In order to measure the success of this it has determined a number of criteria that must be met.

Criterion 1

To ensure that the processing of plans takes no longer than it used to whether the work is done on-site or interstate.

Criterion 2

To ensure the reliability of the system is maintained now that fewer staff will be handling the design process.

The table below outlines the evaluation strategy Truss-Tee has put in place to measure one of these criteria.

Complete the table to outline a strategy they could use to evaluate the **second criterion**.

Sample Questions

Example based on **Question 12 VCAA 2009**

Truss-Tee manufactures timber roof trusses and wall frames for housing construction projects. The business is almost 30 years old and has factories in Melbourne, Sydney, Brisbane and Perth. Truss-Tee is establishing the evaluation criteria for **their new software solution**; it allows plans to be sent between factories.

The main requirement is to efficiently and effectively share the design workload between all their three sites across the country. In order to measure the success of this it has determined a number of criteria that must be met.

Criterion 1
To ensure that the processing of plans takes no longer than it used to whether the work is done on-site or interstate.
Criterion 2
To ensure the reliability of the system is maintained now that fewer staff will be handling the design process.
The table below outlines the evaluation strategy Truss-Tee has put in place to measure one of these criteria.
Complete the table to outline a strategy they could use to evaluate the **second criterion**.

Thank you

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