# Melbourne High School: Software Development 3/4

#### Timeline 2011 by Adrian Janson

**Main text*:*** Software Development: Core Techniques and Principles by Janson (2010)

**Visual Basic .NET text:** Visual Basic .NET for Education: 2010 Edition by Janson (2010)

Note: All page number references are from ‘Software Development: Core Techniques and Principles’.

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| **Week**  | **Theory, Practical Tasks and Assessment**  | **Resources** |
| 1: 01/02 - 04/02 | Theory: Introduction to the course* SAC dates
* Timeline

History: A perspective | **Documents:**SD\_Detailed\_Timeline\_2011.docSD\_Study\_Design\_2011.docreadme-ITStudents.docVCAA-Rules.docinfotechsd2011-2014.pdf**Presentations:**\Theory\Old\_computer\_ads.ppt\InfoTech\Presentations\shift-happens-23665.ppt**Demonstration:**A piece of computing history |
| 2: 07/02 - 11/02 | Theory:Information System Def. (3)Problem-solving Methodology (PSM)* [1.1] Overview and stages (1-7)

Prac:Introduction to programming* [3.10] Microsoft Visual Basic .NET / C#
* [2.7] Processing features of programming languages (83-86)
* Programming structures – sequence, selection, repetition (65)
* [3.7] Naming conventions ()
* [2.1, 2.8, 2.9] Programming Folio #1 (85, 86)
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapters 1 and 6Ch.1 Context Questions (8)Ch.6 Context Questions (88) |
| 3: 14/02 - 18/02**Swimming:****14/2** | Theory:Computer Architecture* Motherboard and components (12-15)

Computer Hardware * Storage devices (15,16)
* [3.1] Mobile technologies (16-20)

Prac:Programming continued* [2.1, 2.8, 2.9] Programming Folio #2
* [2.2] Arrays, control arrays
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 2 (first half) |
| 4: 21/02 - 25/02 | **Theory:**Networks* Types – peer to peer, client server
* LANs / WANs
* Cabling / media
* Wireless
* Bandwidth
* Components – switches, routers, servers, NIC, bridges, firewalls, servers
* [1.3, 1.4] Protocols - TCP/IP
* [1.3, 1.4] OSI model
* [4.1] Intranets, the Internet and VPNs ()
* [4.2] Wired / wireless networks

Prac:Programming continued* [2.1, 2.8, 2.9] Programming Folio #3
 | **Documents:****Video:**‘Warriors of the Net’ \Videos\Warriors.mpg**Presentations:****Text Activities (to be completed):**Read Chapter 2Ch.2 Context Questions (31) |
| 5: 28/02 - 04/03**Aths#1:****01/03****Aths#2:****03/03** | **Theory:**[1.2] Planning software projects* Identifying, scheduling and monitoring tasks, resources (33-35)
* [1.5] Data collection methods (35-37)
* [1.6] Functional and non-functional requirements (37)
* [1.7, 1.9] Constraints and scope (39-40)

Software Requirements Specification (SRS)* [1.12] Composition, purpose (40, 41)

Prac:Programming continued* [2.1, 2.8, 2.9] Programming Folio #4
* [3.16] Utilities in a programming environment
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 3Ch.3 Context Questions (42) |
| 6: 07/03 - 11/03 | **Theory:**Analysis Tools: Part 1* [1.10] Use case via UML (44-46)
* [1.11] DFD (47-58)
* [1.11] Context diagrams (59)

Prac:Programming continued* [2.1, 2.8, 2.9] Programming Folio #5
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 4Ch.4 Context Questions (60) |
| 7: 14/03 - 18/03**Labour Day: 14/03****Chorals: 18/03** | **Theory:**U3O1* Practice SAC
* Assessment criteria
* Introduction to Microsoft Visio
 | **Documents:**\SACs\U3O1\_practice.doc\SACs\U3O1\_Assessment\_2010.doc |
| 8: 21/03 - 25/03 | **Theory:**U3O1* Practice SAC
* Assessment criteria
* Introduction to Microsoft Visio
 | **Documents:**\SACs\U3O1\_Assessment\_2010.doc |
| 9: 28/03 - 01/04 | **Assessment:**U3O1 Due: 08/04 | **Documents:**\SACs\U3O1\_Assessment\_2010.doc\SACs\U3O1\_2010.doc |
| 10: 04/04 - 08/04**End Term 1** | **Assessment:**U3O1 Due: 08/04 | **Documents:**\SACs\U3O1\_Assessment\_2010.doc\SACs\U3O1\_2010.doc |
| 11: 27/04 - 29/04**Easter Mon: 25/04****Anzac: 26/04****Start Term 2** | **Theory:**[2.3] Design Tools Part 1* Data dictionary (62)
* Data structure diagram (63)
* Object description (64)
* Algorithms (65-68)

Prac:Programming continued* [2.1, 2.8, 2.9] Programming Folio #6
* [2.2] Files, records (93, 94)
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 7Ch.7 Context Questions (95) |
| 12: 02/05 - 06/05 | **Theory:**[3.8] Design Tools Part 2* Screen designs (78)
* Storyboards (79)

Design factors* [2.4] Efficient and effective IO (68-71)
* [2.6] Efficient and effective solutions ()
* [2.5] Needs of users (71-72)
* [2.6] Criteria for evaluation
* [3.5, 3.6] User interface design (71-75)

Prac:Programming continued* [2.1, 2.8, 2.9] Programming Folio #6 continued
* [2.2] Files( )
* [3.14] Internal documentation
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 5Ch.5 Context Questions (80) |
| 13: 09/05 - 13/05 | **Theory:**Testing* [2.10] Testing tables, test data ()

U3O2* Practice SAC
* Assessment criteria
 | **Documents:**\SACs\U3O2\_Assessment\_2010.doc |
| 14: 16/05 - 20/05 | **Assessment:**U3O2Due: 27/05 | **Documents:**\SACs\U3O2\_Assessment\_2010.doc\SACs\U3O2\_2010.doc |
| 15: 23/05 - 27/05 | **Assessment:**U3O2Due: 27/05 | **Documents:**\SACs\U3O2\_Assessment\_2010.doc\SACs\U3O2\_2010.doc |
| 16: 30/05 - 03/06**VCE Trials: 31/05-02/06** | Theory:[3.9] Complex data structures* 2D arrays ()
* Stacks ()
* Queues ()

Prac:Programming continued* Programming Folio #7
* Stack
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 8 |
| 17: 06/06 - 10/06**VCE study day: 10/06** | Theory:[3.12] Searches and sorts* Binary search ()
* Bubble sort ()
* Quick sort ()

Prac:Programming continued* Programming Folio #8
* Sort
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 8Ch.8 Context Questions () |
| 18: 13/06 - 17/06**Queen’s Birthday: 13/06****Correction Day: 16/06****Yr.11 Exams: 17/06** | Theory:Validation* [3.11] Type, existence, range ()

Handling files* [3.2] Security of, backup, archiving, disposal ()
* [3.3] Serial, random access ()
* [3.4] File size, media and access

Prac:Programming continued* Programming Folio #8
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 9Ch.9 Context Questions () |
| 18: 20/06 - 24/06**Yr.11 Exams: 20/06-22/06****Report Writing: 24/06** | **Theory:**Documentation* [3.15] Types, forms ()
* [4.9] System support documentation and appropriateness for users ()

Training* [4.8] Types, measures of suitability ()

Testing* [3.13] Selection of test data ()
* Testing tables ()
* Desk checks ()
* Types of errors ()
* [4.7] Acceptance testing ()
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 10Ch.10 Context Questions () |
| 19: 27/06 - 01/07**End Term 2** | Theory:Legal / Ethical * [3.17] Copyright ()
* [3.17] Privacy ()
* [3.17] Other laws
* [4.10] Ethics / code of conduct ()
* [4.10] Causes of conflict ()
* [4.11] Strategies for managing conflict ()
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 11Ch.11 Context Questions () |
| 20: 18/07 - 22/07**Start Term 3** | **Theory:**U4O1* Practice SAC
* Assessment criteria
 | **Documents:**\SACs\U4O1\_Assessment\_2010.doc |
| 21: 25/07 - 29/07 | **Theory:**U4O1* Practice SAC
* Assessment criteria
 | **Documents:**\SACs\U4O1\_Assessment\_2010.doc |
| 22: 01/08 - 05/08 | **Assessment:**U4O1Due: 12/08 | **Documents:**\SACs\U4O1\_Assessment\_2010.doc\SACs\U4O1\_2010.doc |
| 23: 08/08 - 12/08 | **Assessment:**U4O1Due: 12/08 | **Documents:**\SACs\U4O1\_Assessment\_2010.doc\SACs\U4O1\_2010.doc |
| 24: 15/08 - 19/08 | **Theory:**[3.18] Security* [1.8] Malware, viruses, worms ()
* [4.3, 4.4] Networks ()
* Physical / logical ()
* Encryption ()
* Viruses ()
* Biometrics ()
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 12Ch.12 Context Questions () |
| 25: 22/08 - 26/08 | **Theory:**Evaluation* [4.5] Characteristics of efficient and effective solutions ()
* [4.6] Strategies for acquiring data ()
 | **Documents:****Presentations:****Text Activities (to be completed):**Read Chapter 13Ch.13 Context Questions () |
| 26: 29/08 - 02/09 | **Theory:**U4O2* Practice SAC
* Assessment criteria

**Assessment:**U4O2Test: This week – TBA | **Documents:**\SACs\U4O2\_Assessment\_2010.doc\SACs\U4O1\_2010.doc |
| 27: 05/09 - 09/09**Cross Country: 08/09** | **Theory:**Exam preparation | **Documents:**\Exams\\Exams\ExamPack2011\\Lecture Notes\Examination\_Handout.doc\Exams\Full\_Course\_Summary\_2003.rtf\Exams\Algos2003.doc\Exams\AlgorithmPractice-cg.doc\Exams\SD\_Quiz1.ppt\Exams\SD\_Quiz2.ppt\Exams\SD\_Quiz3.ppt\Exams\SD\_Quiz4.ppt**Presentations:**\Exams\keyknowledge.ppt |
| 28: 12/09 - 16/09 | **Theory:**Exam preparation |  |
| 29: 19/09 - 23/09**VCE Trial Exams: 19/09-23/09****End Term 3** | **Theory:**Exam preparation |  |
| 30: 10/10 - 14/10**Start Term 4** | **Theory:**Exam preparation |  |
| 31: 17/10 - 21/10 | **Theory:**Exam preparation |  |
| 32: 24/10 - 26/10**Last Day Year 12: 26/10** | **Theory:**Exam preparation |  |

**SAC Summary**

**Unit 3**

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| **Outcome 1**Analyse an information problem in order to produce software requirements specifications for a solution that operates within a networked environment. | Report | 40 | April 8 |
| **Outcome 2**Represent a software design and apply a range of functions and techniques using a programming language to develop a prototype solution to meet a specific need. | Prototype source code + report | 60 | May 27 |

**Unit 4**

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| **Outcome 1**Solution (45) + User documentation / report (15)Apply stages of the problem-solving methodology to produce a solution for use on a mobile device, which takes into account technical and legal requirements. | Solution source code + user doc / report | 6045 + 15 | August 12 |
| **Outcome 2**Test (50)Recommend and justify strategies for evaluating the effectiveness and efficiency of solutions that operate in a networked environment. | Test | 40 | Aug 29-Sept 02 |