# 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.doc  SD\_Study\_Design\_2011.doc  readme-ITStudents.doc  VCAA-Rules.doc  infotechsd2011-2014.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 6  Ch.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 2  Ch.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 3  Ch.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 4  Ch.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 7  Ch.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 5  Ch.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:**  U3O2  Due: 27/05 | **Documents:**  \SACs\U3O2\_Assessment\_2010.doc  \SACs\U3O2\_2010.doc |
| 15:  23/05 -  27/05 | **Assessment:**  U3O2  Due: 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 8  Ch.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 9  Ch.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 10  Ch.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 11  Ch.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:**  U4O1  Due: 12/08 | **Documents:**  \SACs\U4O1\_Assessment\_2010.doc  \SACs\U4O1\_2010.doc |
| 23:  08/08 -  12/08 | **Assessment:**  U4O1  Due: 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 12  Ch.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 13  Ch.13 Context Questions () |
| 26:  29/08 -  02/09 | **Theory:**  U4O2   * Practice SAC * Assessment criteria   **Assessment:**  U4O2  Test: 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 | 60  45 + 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 |