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| Pearson  Higher Nationals in | | |
| Computing | | |
| SCHEME OF WORK | | |
| Unit 30: | | Application Development | |
| For use with the Higher National Certificate and  Higher National Diploma in Computing | | |
| First teaching from September 2017 | | |
| **Issue** | **1** | |



Please note that Schemes of Work are for guidance and support only.

They can be customised and amended according to localised needs and requirements.

All schemes of work can be adapted to suit specific establishment time frames in line with GLH delivery.

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scheme of work

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| Programme Title: | Higher Nationals in Computing | Level: | 5 |
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| Unit Title: | Application Development | Tutor: |  |
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| Unit Number: | 30 | Academic Year: |  |

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| Learning Outcomes (LO) | Assessment 1 | Assessment 2 | Assessment 3 | Assessment 4 |
| Produce a Software Design Document by analysing a business-related problem and deduce an appropriate solution including a set of initial requirements. |  |  |  |  |
| Use design and development methodologies with tools and techniques associated with the creation of a business application. |  |  |  |  |
| Work individually and as part of a team to plan and produce a functional business application with support documentation. |  |  |  |  |
| Evaluate the performance of a business application against its Software Design Document and initial requirements. |  |  |  |  |

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| Sessions | Learning Outcome(s) | Session Activities |
| --- | --- | --- |
| Session 1 | LO1  Topic: Analysis of a business-related problem and assessment of possible solutions | * Introduction to the unit content and unit assessment. * Present an outline of application development and introduce or recap software development life cycles. * Issue a number of challenges.   Sample activities:   * Pair work: Discuss and review problem definition statements. * Individual work: Produce a problem definition statement to highlight and describe the issues that need to be addressed. * Group work: Review and compare statements. |
| Session 2 | LO1  Topic: Analysis of a business related problem and assessment of possible solutions | * Introduction to the unit assignment. * Review the assignment and discuss objectives   Sample activities:   * Pair work: Research and consider possible solutions to the assignment brief. * Individual work: Review and predict the overall success of the application. |
| Session 3 | LO1  Topic: Producing a Software Design Document | Introduce Software Design Documents with regards to application development. Discuss application goals, problem declaration, stakeholders, functional descriptions, user-interfaces (design, navigation, error handling and validation), operations, flowcharts, pseudocode, control, application state, storyboards, configuration, testing, milestones, schedules, Gantt charts, etc.  Sample activities:   * Pair work: Review and discuss the value of Software Design Documents with regards to application development. * Individual work: Prepare ideas to highlight and define issues and requirements suitable as possible solutions to the assignment brief. |
| Session 4 | LO1  Topic: Producing a Software Design Document | Application development workshop with tutor support.  Sample activities:   * Individual work: Evaluate your possible solutions and synthesise the ideas into a single document that identifies and attempts to solve the business-related problem. * Pair work: Review and discuss documented ideas (modifying and updating where appropriate). |
| Session 5 | LO1  Topic: Producing a Software Design Document | Review and recap software testing.  Sample activities:   * Individual work: Research and use information relating to software testing to create a suitable test plan (with test data) for your business application, including operations, input, output and requirements. |
| Session 6 | LO2  Topic: Different design and development methodologies | Present overviews on current design and development methodologies.  Sample activities:   * Pair work: Research and explore different design and development methodologies. * Pair work: Complete sample challenges using different methods and review differences. |
| Session 7 | LO2  Topic: Different design and development methodologies | * Review of student progress on the unit assignment. * Recap different design and development methodologies and software development life cycles.   Sample activities:   * Class work: Debate various strengths and weaknesses commonly associated with each methodology. |
| Session 8 | LO2  Topic: Different design and development methodologies | Application development workshop with tutor support.  Sample activities:   * Individual/Pair work: Discuss, select or synthesise a design and development methodology for use with the creation of your application. |
| Session 9 | LO2  Topic: Using appropriate tools and techniques | * Application development workshop with tutor support. * Introduce the different tools and techniques used in the development of a business application.   Sample activities:   * Individual work: Complete simple application development challenges using different tools and techniques. * Group work: Evaluate the different tools and techniques used to create a business application. |
| Session 10 | LO2  Topic: Using appropriate tools and techniques | Application development workshop with tutor support.  Sample activities:   * Class work: Debate the advantages and disadvantages of your preferred or selected tools and techniques. * Individual work: Continue assignment application development plan and Software Design Document. |
| Session 11 | LO3  Topic: Working in a small team to plan and prepare your business application | * Application development workshop with tutor support. * Introduce team working and assign individuals to teams.   Sample activities:   * Individual work: Continue assignment application development plan and Software Design Document. * Team work: Peer review and debate your development plan by effectively communicating and defending the ideas in your Software Design Document. |
| Session 12 | LO3  Topic: Working in a small team to plan and prepare your business application | * Review of student progress on the unit assignment. * Application development workshop with tutor support.   Sample activities:   * Team work: Discuss differences with regards to the possible strengths and weaknesses of each Software Design Document. * Individual work: Modify your Software Design Document to reflect any new insights or considerations. * Pair work: Review and discuss modifications. |
| Session 13 | LO3  Topic: Preparation and production of a functional business application | * Application development workshop with tutor support. * Recap requirement where necessary.   Sample activities:   * Team work: Team support. * Individual work: Use your Software Design Document with your preferred design and development methodology and your selected tools and techniques to develop a functional business application. |
| Session 14 | LO3  Topic: Preparation and production of a functional business application | * Application development workshop with tutor support. * Recap requirement where necessary.   Sample activities:   * Team work: Team support. * Individual work: Continue to develop a functional business application. * Individual work: Research technical challenges, issues, functional testing and improvement implementation. * Individual/Pair work: Create and quality check appropriate support documents for your application. |
| Session 15 | LO3  Topic: Preparation and production of a functional business application | * Application development workshop with tutor support. * Recap requirement where necessary.   Sample activities:   * Team work: Team support. * Individual work: Continue to develop a functional business application. * Individual work: Research technical challenges, issues, functional testing and improvement implementation. * Individual/Pair work: Create and quality check appropriate support documents for your application. |
| Session 16 | LO3  Topic: Preparation and production of a functional business application | * Application development workshop with tutor support. * Recap requirement where necessary.   Sample activities:   * Team work: Team support. * Individual work: Continue to develop a functional business application. * Individual work: Research technical challenges, issues, functional testing and improvement implementation. * Individual/Pair work: Create and quality check appropriate support documents for your application. |
| Session 17 | LO3  Topic: Preparation and production of a functional business application | * Application development workshop with tutor support. * Recap requirement where necessary.   Sample activities:   * Team work: Team support. * Individual work: Continue to develop a functional business application. * Individual work: Research technical challenges, issues, functional testing and improvement implementation. * Individual/Pair work: Create and quality check appropriate support documents for your application. |
| Session 18 | LO3  Topic: Preparation and production of a functional business application | * Review of student progress on the unit assignment. * Application development workshop with tutor support. * Recap requirement where necessary.   Sample activities:   * Team work: Team support. * Individual work: Continue to develop a functional business application. * Individual work: Research technical challenges, issues, functional testing and improvement implementation. * Individual/Pair work: Create and quality check appropriate support documents for your application. |
| Session 19 | LO4  Topic: Assessing the performance of a business application | Discuss and analyse factors that influence the performance of a business application with regard to its system requirements.  Sample activities:   * Individual work: Undertake a critical review of the performance and development of your application against all identified factors and any adopted design and development methodologies. * Individual work: Measure the overall success of the application against your original prediction and identify any new areas of personal insight. |
| Session 20 | LO4  Topic: Planning improvements to a business application | * Review of student drafts for unit assignment. * Recap and summarise application development supported with a reflection of the learning outcomes.   Sample activities:   * Individual work: Evaluate the overall strengths and weaknesses of your business application against its Software Design Document and initial requirements. * Pair work: Discuss and plan in detail possible revisions (including implementation) with regard to improving your application’s performance. |