**MINISTRY OF EDUCATION, MALAYSIA**

**VOCATIONAL COLLEGE STANDARD CURRICULUM**

**COURSE INFORMATION**

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| **COURSE NAME** | **:** | **INTRODUCTION TO APPLICATION SYSTEM DEVELOPMENT** | |
| **CODE NAME** | **:** | **KPD1013** | |
| **LEVEL** | **:** | **3 SEMESTER 1** | |
| **CREDIT UNIT** | **:** | **3.0** | |
| **CONTACT HOUR** | **:** | **FACE TO FACE** | **: 5 HOURS/WEEK** |
|  |  | **NON FACE TO FACE** | **:** |
| **COURSE TYPE** | **:** | **VOCATIONAL** | |
| **PREREQUISITE**  **CORE REQUISITE** | **:**  **:** | **-**  **-** | |

**COURSE OUTCOMES**

At the end of the course, the students should be able to:-

* Specify the systems development environment
* Represent the process using Unified Modelling Language
* Structuring the system requirement
* Structure the functional specification documentation

**COURSE DESCRIPTION**

Application development describes the competencies required to **build/create application prototype** that simulates a few aspects of the final product such as **user interface** or **application flow**.

The person who is competent in this CU shall be able to specify the system development inviroment, use of Unified Modelling Language to simulate activities process, interpret application prototype development requirement and use of system documentation as guidence.

The **outcome** of this competency is a **accurate information according to Software Requirement Specification (SRS).**

**CONTENT AND LEARNING STANDARDS**

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| **PROGRAM** | **:** | **TEKNOLOGI PENGURUSAN PANGKALAN DATA DAN APLIKASI WEB** |
| **COURSE NAME** | **:** | **INTRODUCTION TO APPLICATION SYSTEM DEVELOPMENT** |
| **CODE NAME** | **:** | **KPD1013** |

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| **CONTACT HOURS**  **(TRAINING DURATION)** | **CONTENT STANDARD**  **(WORK ACTIVITIES)** | **LEARNING STANDARD**  **(RELATED KNOWLEDGE / APPLIED SKILLS / ATTITUDE / SAFETY / ENVIROMENTAL)** | **PERFORMANCE CRITERIA /**  **ASSESSMENT CRITERIA** |
| **15 HOURS**  **(3 WEEKS)**  Related Knowledge  (10 Hours)  2 Weeks  Applied Skills  (5 Hours)  1 Week | **1.0 SPECIFY THE SYSTEMS DEVELOPMENT ENVIRONMENT** | **Related Knowledge**   1. Definition of Software Development Life Cycle (SDLC) according to standard 2. Fundamental systems development life cycle and its phases according to standard 3. Software Development Life Cycle (SDLC) method according to standard such as:  * Agile development * Scrum development  1. Alternatives to the SDLC, including a description of the role of computer-aided software engineering (CASE) tools in systems development according to standard 2. Introduction to ethical and professional issues concern to software development according to standard 3. Purpose of End User License Agreement (EULA) according to standard 4. Software licensing such as:  * Proprietary * Open Sauce   **Applied Skills**   1. Software Development Life Cycle diagram according to standard   *Attitude*:   1. Adhere to End User License Agreement (EULA)   *Safety*:   1. Adhere to workplace ergonomics practice | **Assessment Criteria**   1. Definition of Software Development Life Cycle (SDLC) explained 2. Fundamental of Systems Development Life Cycle (SDLC) and its phases is described 3. Systems Development Life Cycle (SDLC) method described 4. Ethical and Professional Issues concern to software development listed 5. Purpose of End User License Agreement (EULA) explained 6. Workplace ergonomic practice explained 7. Types of software licensing listed   **Performance Criteria**  1.1 Software Development Life Cycle diagram sketched according to standard |

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| **30 HOURS**  **(6 WEEKS)**  Related Knowledge  (5 Hours)  1 Week  Applied Skills  (25 Hours)  5 Weeks | **2.0 REPRESENT THE PROCESS USING UNIFIED MODELLING LANGUAGE** | **Related Knowledge**   1. Definition of Unified Modelling Language (UML)   **Applied Skills**   1. Diagram model for Unified Modelling Language (UML) for:  * Use-Case diagram * Class diagram * State diagram * Sequence diagram | **Assessment Criteria**   1. Definition of Unified Modelling Language (UML) explained   **Performance Criteria**   1. Diagram model for Unified Modelling Language (UML) produced using appropriate software according to standard. |

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| **30 HOURS**  **(6 WEEKS)**  Related Knowledge  (10 Hours)  2 Weeks  Applied Skills  (20 Hours)  4 Weeks | **3.0 STRUCTURE THE SYSTEM REQUIREMENT** | **Related Knowledge**   1. Overview of Requirement Engineering stages according to standard  * Requirement Elicitation * Requirement Analysis * Requirement Specification * Requirement Management  1. Function of Software Requirement Specification (SRS) according to standard 2. Project brief content such as:  * Development timeline * Modules number * Task assignation   **Applied Skills**   1. Obtain project brief 2. Identify development timeline 3. Determine modules number to be developed 4. Identify task assignation 5. Check application prototype mock up design 6. Check application prototype flow   *Attitude*:   1. Proactive when interpret application prototype development requirement 2. Resourceful when interpret application prototype development requirement 3. Committed when interpret application prototype development requirement 4. Analytical thinking when interpret application prototype development requirement 5. Adhere to End User License Agreement (EULA)   *Safety*:   1. Adhere to workplace ergonomics practice | **Assessment Criteria**   1. Appropriate methods to elicit system requirements selected 2. Function of Software Requirement Specification (SRS) explained 3. Types of project brief content listed   **Performance Criteria**   * 1. Development timeline confirmed according to Software Requirement Specification (SRS)   2. Modules number to be developed confirmed according to job brief   3. Task assignation confirmed according to job brief   4. Application prototype mock up design interpreted according to storyboard   5. Application prototype flow interpreted according to storyboard |

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| **10 HOURS**  **(2 WEEKS)**  Related Knowledge  (5 Hours)  1 Week  Applied Skills  (5 Hours)  1 Week | **4.0 STRUCTURE THE FUNCTIONAL SPECIFICATION DOCUMENTATION** | **Related Knowledge**   1. Types of functional specification document such as:  * Functional Design Specification (FDS) * Software Design Document (SDD)   **Applied Skills**   1. Functional specification document such as:  * Functional Design Specification (FDS) * Software Design Document (SDD)   *Attitude*:   1. Follow company’s coding guidline   *Safety*:   1. Adhere to workplace ergonomics practice | **Assessment Criteria**   1. Types of functional specification document listed   **Performance Criteria**   1. Functional specification document is produce |

**Employability Skills**

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| **Core Abilities** | **Social Skills** |
| 01.01 Identify and gather information.  01.02 Document information procedures or processes.  01.03 Utilize basic IT applications.  02.01 Interpret and follow manuals, instructions and SOP's.  02.03 Communicate clearly.  02.04 Prepare brief reports and checklist using standard forms.  02.05 Read/Interpret flowcharts and pictorial information.  03.02 Demonstrate integrity and apply practical practices.  03.03 Accept responsibility for own work and work area.  03.04 Seek and act constructively upon feedback about work performance.  03.06 Respond appropriately to people and situations.  03.07 Resolve interpersonal conflicts.  06.01 Understand systems.  06.02 Comply with and follow chain of command.  06.03 Identify and highlight problems.  06.04 Adapt competencies to new situation systems.  01.04 Analyze information.  01.05 Utilize the Internet to locate and gather information.  01.06 Utilize word processor to process information.  02.07 Utilize Local Area Network (LAN)/Intranet to exchange information.  02.08 Prepare pictorial and graphic information.  03.08 Develop and maintain a cooperation within work group.  04.01 Organize own work activities.  04.02 Set and revise own objectives and goals.  04.03 Organize and maintain own workplace.  04.04 Apply problem solving strategies.  04.05 Demonstrate initiative and flexibility.  06.05 Analyse technical systems.  06.06 Monitor and correct performance of systems.  01.07 Utilize database applications to locate and process information.  01.08 Utilize spreadsheets applications to locate and process information.  01.10 Apply a variety of mathematical techniques.  01.11 Apply thinking skills and creativity.  02.09 Prepare flowcharts.  02.10 Prepare reports and instructions.  02.11 Convey information and ideas to people.  03.15 Liaise to achieve identified outcomes.  05.01 Implement project/work plans.  05.02 Inspect and monitor work done and/or in progress. | 1. Communication skills 2. Conceptual skills 3. Interpersonal skills 4. Learning skills 5. Leadership skills 6. Multitasking and prioritising 7. Self-discipline 8. Teamwork |

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| **Tools, Equipment and Materials (TEM)** | |
| **ITEMS** | **RATIO (TEM : Trainees)** |
| 1. Computer set 2. Internet connection 3. Source Code Management (SCM) software 4. IDE software 5. Software Development Kit (SDK) 6. Database Management System (DBMS) 7. Word processing software 8. Computer with server role 9. Stationeries | 1:1  As required  1:1  1:1  1:1  1:1  1:1  1:25  As required |

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| **Reference** |
| **REFERENCES** |
| 1. **Joseph S. Valacich, Joey F. George, Jeffrey A. Hoffer (2012), Essentials of systems analysis and design (5th Edition), Pearson Education, Inc., ISBN-13: 978-0137067114** 2. **Alan Dennis,** **Barbara Haley Wixom,** **Roberta M. Roth (2012), Systems analysis and design (5th Edition),** **John Wiley & Sons, Inc.,ISBN 978-1-118-05762-9** 3. Todd Zaki Warfel (2009), Prototyping: A Practitioner's Guide, Louis Rosenfeld Media, LLC, ISBN I-933820-21-7 4. Steve McConnell (2004), Code Complete: A Practical Handbook of Software Construction, (2nd Edition),Microsoft Press, ISBN: 978-0-7356-1967-8 5. Michael L. Scot (2009) , Programming Language Pragmatics, Third Edition, Morgan Kaufmann, ISBN-13: 978-0123745149 6. Benjamin C. Pierce (2002), Types and Programming Languages (1st edition), The MIT Press, ISBN-13: 978-0262162098 7. Simon Marlow (2013), Parallel and Concurrent Programming in Haskell: Techniques for Multicore and Multithreaded Programming (1st Edition), O'Reilly Media, ISBN-13: 978-1449335946 8. Scott Meyers (2005), Effective C++: 55 Specific Ways to Improve Your Programs and Designs (3rd Edition),  Addison-Wesley Professional, ISBN-13: 978-0321334879 9. Ellen Siever, Stephen Figgins, Robert Love, Arnold Robbins (2009), Linux in a Nutshell (6th Edition), O'Reilly Media, ISBN-13: 978-0596154486 |

**Disediakan oleh:**

**KEMENTERIAN PENDIDIKAN MALAYSIA**

**OCT 2018**