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| Title | **Web design and development** | | |
| Level | **4** | **Credits** | **15** |

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| Purpose | The aim of this module is to develop the skills, knowledge and understanding to design and develop a web based software application (E-Commerce enabled) in any web design/development software. |

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| Classification ISCED | 0414 Marketing and advertising |

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| Available grade | Competent / Not yet competent |

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| Modification history | N/A |

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| **Competency Unit** | **Performance Criteria** | **Knowledge and Understanding** |
| **B1:** Introduce Some Web Designing languages | * 1. Figure out different web application development languages   2. Develop front end design using HTML, JQuery, JavaScript, etc   3. Identify different coding standards in **any** of the computer language (Sun J2EE, MS ASP.Net, PHP) to meet the market requirements.   4. Implement concept of Object Oriented Programming (OOP) to solve the real life problem by doing Server/Client side scripting.   5. Unit testing and debugging to check the correctness of the software program | * 1. Knowledge of different web application user Interface design   2. Information of E-Commerce system   3. Knowledge to develop site map of web application |

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| **B2:** Framework | * 1. Procedure to Identify different frameworks and its application   2. Develop a software application using frameworks   3. Efficiently use framework libraries to develop the software application | * 1. Knowledge of different framework i-e Spring MVC, JSF, Struts, CodeIgenator, Zend, Entity Framework)   2. Knowledge of application development techniques   3. Awareness to use different libraries |

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| **B-3:** Database | * 1. Identify entity classes   2. Design ERD diagram from entity classes   3. Apply normalization and de-normalization techniques   4. Design database queries (e.g create, insert, update, delete etc)   5. Design database in different tools | 1. **1** Knowledge of Entity classes    1. Skill of Entity Relationship Diagram (ERD) design    2. Knowledge of database queries designing    3. Information of database design tool |

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| **B- 4:** Security (HTTPS) | * 1. Apply Security techniques on server side (64/32-bit)   2. Implementation of Cryptology (Encryption) standards   3. Configure SSL certificate on server   4. Auditing (Vulnerabilities) of Technical Infrastructure | * 1. Knowledge of server configuration to enable Secure Socket Layer, Payment Card Industry Data Security Standard (PCI DSS)   2. Aware about Public Key Encryption (PKI) for public-private keys, AES (Advance Encryption Standard), Below Fish for Cypher development   3. Information of Firewalls configuration(Packet Filtering, Proxy Server)   4. Knowledge of Anti-Hacking (Intrusion   Detections, Worms Attacks, Denial of Service-DoS) tools   * 1. Illustrate to Short comings of different Internet protocol (UDP, etc.) |
| **B 5:** Payment Modes | * 1. Identify different payment systems   2. Apply different payment Transaction mechanism | * 1. Explain renowned Payment modes (Credit/Debit cards)   2. Knowledge of Web Service integration with VeriSign |

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|  |  | * 1. spell out about different financial networks e.g. Union Pay, Visa, MasterCard, ORIX Leasing, 1-Link, MNet, Phoenix,)   2. Explain & Implementation of Internationality recognized Payment protocol including ACH (American Clearing House, PayPal) |