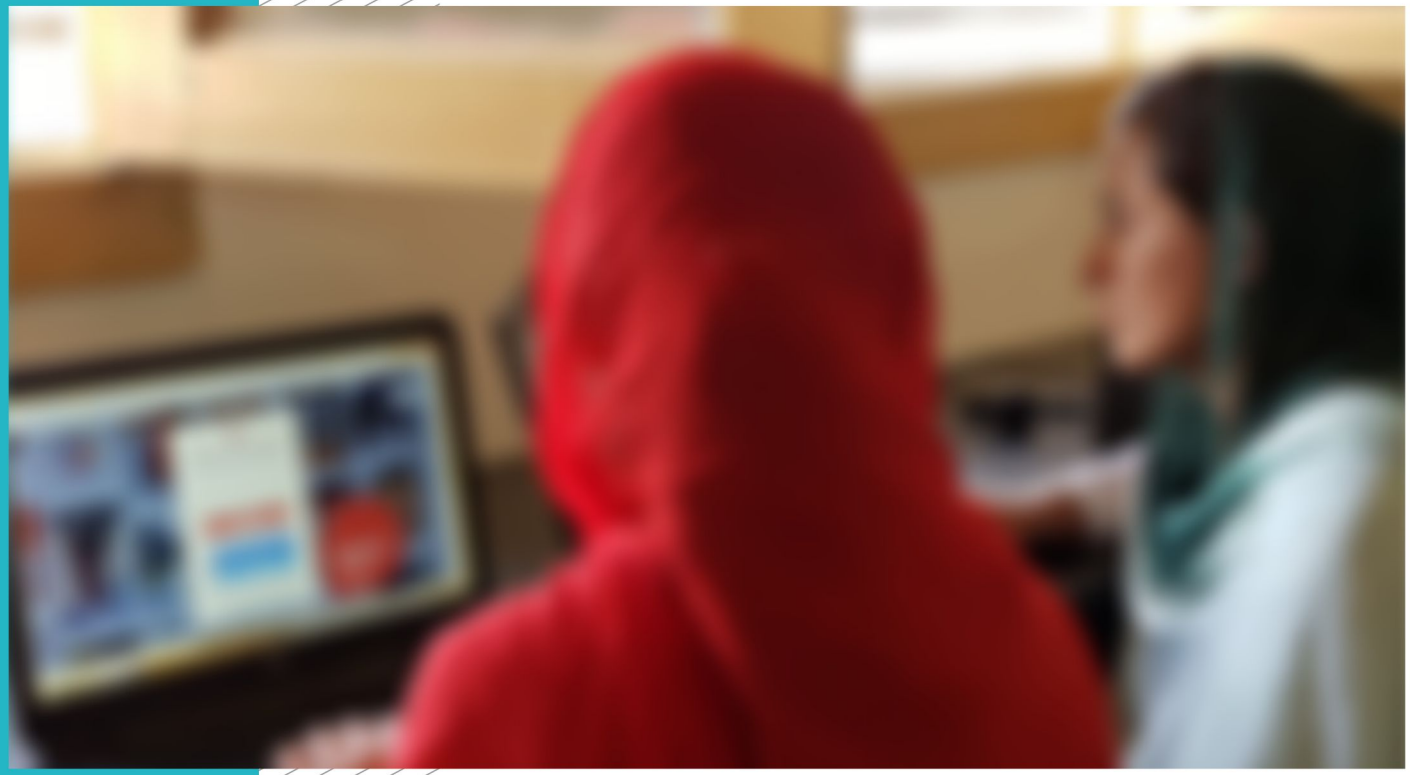
E - COMMERCE



Competency Standards

National Vocational Certificate Level 4

Version 1 - July 2013

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Competency Standards: E-Commerce

1. Module: Business Analysis

Overview: This competency standards will enable students to analyse different business situations.

Competency Unit	Performance Criteria	Knowledge and Understanding
A-1: Explain concept & terminologies	**P-1** Evolution of Electronic Commerce **P-2** Categorization of E-Commerce Sites **P-4** Demonstrate an E-commerce web application(e,g eBay, Pay Pal, Amazon, Digital River etc) **P-5** Identify between different ecommerce web application	**K-1**Explain development and gradual growth of E-Commerce e.g. 1995: eBay is founded by computer programmer. **K-2** Elaborate inception of E-tailing or "virtual storefronts" on websites with online catalogues, Electronic Data Interchange (EDI), the business-to-business exchange of data **K-3** Define online Transaction Processing using Electronic Funds Transfer (EFT) **K-4** Knowledge about categories including but not limited to (B-B, B-C, C-C, and G-C) **K-5** Information about the issues including Currency Conversion, Copy Rights, Product Delivery, Product EULA (End User License Agreement), Taxation, Linguistics)

Competency Unit	Performance Criteria	Knowledge and Understanding
A2: Market Intelligence	**P-1** Classify the market into different segments **P-2** Assess the need of segmented market **P-3** Identify the market demands for Products, Services, and Tasks (e.g. Applied Research) **P-4** Gather and analyse the data **P-5** Decision making in determining market opportunity	**K-1** Knowledge about products sales information e.g. purchase records for iPhone, newly launched services e.g. distance learning. **K-2** Information about competitive Intelligence (Promotions and advertisement offered by competitors for relevant products, services offered.) **K-3** Information about decision (Cost-Benefit Analysis) Market and Product/Service segmentation.

Competency Unit	Performance Criteria	Knowledge and Understanding
A 3: Requirement Analysis	**P-1** Categorize different processes **P-2** Apply different processes to document the requirements **P-3** Apply jargons in technical writing **P-4** Create Software Requirement Specification (SRS) document	**K-1** Knowledge about SRS document **K-2** Information of requirement traceability (Requirements Traceability Matrix) **K-3** Information of requirement elicitation process

Competency Unit	Performance Criteria	Knowledge and Understanding
A 4: Requirement Designing	**P-1** Development of UML design from SRS. **P-2** Procedure to use UML tools (Sparx Enterprise Architect, EDraw, Argu UML,etc) in order to develop design. **P-3** Relate software design pattern **P-4** Procedure to Create software design(s) **P-5** Develop links with requirements traceability matrix.	**K-1** Information of software design like UML (Use Case, Class, Activity, Sequence, Component, State, Deployment Diagrams) **K-2** Knowledge of different architecture that is N-tier **K-3** Knowledge of Singlton, Factory, proxy, Adaptor, etc.
A 5: Design Test Case	**P-1** Procedure to develop Test Case **P-2** Methods to Design test case for each Use Case of design **P-3** Process to Identify different scenarios **P-4** Techniques to Apply logical conditions **P-5** Integrate traceability options	**K-1** Knowledge to develop Test Case Techniques from different use cases **K-2** Information of condition designing from operators (==, !=, ||, &&, <=, >=, <, >)

1.1. Module 2: Web Design / Development

Overview: 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.

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

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

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

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

		K-3 spell out about different financial networks e.g. Union Pay, Visa, MasterCard, ORIX Leasing, 1-Link, MNet, Phoenix,) **K-4** Explain & Implementation of Internationality recognized Payment protocol including ACH (American Clearing House, PayPal)

1.2. Module 3: Quality Assurance

Overview: The aim of this module is to develop the understanding for the importance and the capability to test, validate and verify the quality features of the E-Commerce application/business.

Competency Unit	Performance Criteria	Knowledge and Understanding

Competency Unit	Performance Criteria	Knowledge and Understanding
C1: Verification & Validation (V&V)	**P-1** Illustrate techniques to validate the requirements against applicable industry/regularity standards **P-2** Classify Techniques to verify the system against business requirements **P-3** Perform gape analysis followed industrial standards **P-4** Assure Quality as per standard like. comparison to CMMI/ISO/SPICE/IEEE process standards **P-5** Perform Quality Control e.g. Defects findings with reference to requirements (Customer/Business)	**K-1** Define Quality as per standard like. comparison to CMMI/ISO/SPICE/IEEE process standards **K-2** Define Quality Control techniques
C 2: Execute Testing	**P-1** Execute the test cases using automated tool(s) **P-2** Perform applicable testing techniques (Alpha, Beta, Integration, System,	**K-1** Explain how to use testing tools e.g. E-Tester **K-2** E Elaborate Testing techniques including Quality Measurement

Competency Unit	Performance Criteria	Knowledge and Understanding
	Regression, Stress, User Acceptance Test, “UAT”)	Indicator (Robustness, Integrity) Cyclomatic Complexity, etc.)

1.3. Module 4: E-Marketing

Overview: The aim of this module is to develop efficient E-Marketing strategies in accordance with the Vision and Mission statement of the organization driven by Electronic means.

Competency Unit	Performance Criteria	Knowledge and Understanding
D 1: SEO (Search Engine Optimization)	**P-1** Apply SEO techniques **P-2** Employ SEO key words **P-3** Demonstrate SEO techniques to priorities their site or web application using automated tools	**K-1** Explain different SEO Methods including but not limited to Getting Indexed, Preventing Crawling, and Increasing Prominence. **K-2** Elaborate White-hat, Black-hat SEO techniques for web application **K-3** Knowledge of SEO key words for web pages translation. **K-4** Application of SEO tools usage

D 2: SCM (Supply Chain Management)	**P-1** Identity potential Suppliers **P-2** Select the appropriate supplier **P-3** Place order as per requirement/inventory **P-4** Inspect received order **P-5** Maintain Inventory as per Inventory Control / store keeping techniques **P-6** Identity different available transportation mode **P-7** Identify steps of reverse SCM i-e from consumer to organization	**K-1** knowledge of procurement Cycle (Launch of RFP/RFQ, Tender, Bidding, Comparative Statement, Award of Contract, Maintenance) **K-2** Explain different techniques to manage goods, avoid their depreciation e.g. JIT (Just In Time) **K-3** Explain product delivery and their traceability **K-4** Knowledge of Incorporation of Outsourcing in logistics. **K-5** Information about electronic Data Interchange methodologies and format.

D 3: Social Media Marketing	**P-1** Identify different Social media marketing techniques **P-2** Apply suitable Classified Advertisement techniques on social media **P-3** Perform Electronic Mail Marketing **P-4** Creation of Blogs	**K-1** Knowledge of different social media sites that is Facebook, Twitter, LinkedIn, Google+ etc **K-2** Explain Brand pages creation on social media sites. **K-3** Familiarity of banner ads integration on different web sites like newspaper site in any demographic region. **K-4** Skills to regularly update brand/product/service blogs. **K-5** Elaborate direct marketing techniques e.g. Email, SMS (Mobile-Commerce) for the projection of company newsletters.

1.4. Module 5: Legal and Ethical Aspects

Overview: The aim of this module is to develop Code of Ethics and Professional Conduct, improve Planning Capabilities, and Awareness to Provision of applicable territorial Taxation / Business / Employment Rights for duties & rights at workplace.

Competency Unit	Performance Criteria	Knowledge and Understanding
E 1: Ethics and Professional Conduct	**P-1** To be on time **P-2** Complete assigned task in time. **P-3** Use official equipments exclusively for official purpose **P-4** Help co-workers without being asked **P-5** Implement defined SOP **P-6** Refrain to make lame excuses **P-7** Handle small stuff	**K-1** Knowledge pertains to penalty/rewards for the decisions/actions s/he make or fail to make and their consequences. **K-2** Explain high regard for resources entrusted to s/he. Including subordinates, tangible assets (equipment's), company profile. **K-3** Skill how to make decisions and act impartially/objectively free from self interest. (Quantified Self assessment can be performed e.g. case studies/white papers.) Areas like Conflict of Interest **K-4** Knowledge about truth and act in truthful manner in conduct/communication. E.g. daily attendance enrolment on register, "What you say is what you did"

Competency Unit	Performance Criteria	Knowledge and Understanding
E 2: Planning of Business-process activities	**P-1** Identify Business process tasks **P-2** Maintain Schedule to perform identified Business process tasks **P- 3** Set Milestones from those tasks **P-4** Apply optimal utilization of resources	**K-1** Explain due assistance to in-line manager e.g. coordinating recurring meetings, intimate resource availability, create and keep documentations, validate applicable company defined standards. **K-2** Describe activities, e.g. specific life cycle methodologies – (Requirement gathering, design solution, prototype, testing, documentations) **K-3** Elaborate estimate time, i-e. hours calculations for an activity, consider calendar year official leaves, company working timings. **K-4** Explain work breakdowns, divide module in smaller and more manageable components. E.g. testing a product may have components like interface, performance, and test cases.

Competency Unit	Performance Criteria	Knowledge and Understanding
E 3: Awareness to Rights	**P-1** Perform whistle blowing **P-2** To document case in Ombudsman situation **P-3** Lodge case in relevant court	**K-1** Know about ourselves and uphold the policies, rules/regulations that governs the work and workplace. **K-2** Knowledge regarding illegal conduct or illegitimate action to appropriate management. **K-3** Information about to Protect propriety or confidential information. (Intellectual Property Rights, Patent, Trademark, Copy Rights, Consumer Protection, Data Protection Act).

TOOLS

- Adobe Dreamweaver
- Netbeans IDE
- Eclipse(Indigo)
- Apache Tomcat, Glassfish, JBoss (JAVA)
- IIS (.net)
- WAMP

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