COURSE OUTLINE

Section 1:

Course Title: Web Technologies

Course Code: CNET-2030

Course Description: The implementation of e-business and e-commerce websites. Students explore both the hardware and software requirements for e-business and e-commerce. Hypertext markup language (HTML), scripting languages, database design, database administration, server installation, server configuration, and site security are examined through hands-on projects.

Grade Scheme: ☐ Pass/Fail ☒ Percentage Minimum Pass Mark: 60%

Course Value: Outcome hours OR 3 Credit(s) 60 (15 class + 45 lab) Hours

Pre-requisites: CIS-1201 Introduction to Object Oriented Programming
CNET-2110 Active Directory Infrastructure
CNET-2210 Virtualization

Co-requisites: NONE

Section 2:

Learning Outcomes and Competencies

1. **Develop web pages to meet business/client requirements.**
    - 1.1 Install and configure web servers.
    - 1.2 Identify the common HTML tags.
    - 1.3 Create static HTML web pages.
    - 1.4 Use cascading style sheets (CSS) to control formatting.
2. **Use scripting languages for e-business/e-commerce website design.**
    - 2.1 Compare and contrast client-side scripting and server-side scripting.
    - 2.2 Use client- side scripts to create dynamic web pages.
    - 2.3 Install and configure server-side scripting languages.

2.4 Write scripts to process user input.

2.5 Use conditional statements and loops to perform required processing.

2.6 Use arrays and functions to perform required processing.

2.7 Write scripts to connect to a database.

2.8 Write scripts to query a database.

2.9 Use Cookies or Sessions to manage state information.

3. Investigate database usage and models.

3.1 Describe common uses for databases in an enterprise.

3.2 Describe various database models.

3.3 Compare and contrast the use of data files to the use of databases for data management.

3.4 Explain the concept of relational databases.

3.5 Explain primary and foreign keys and their importance to relational databases.

4. Design relational databases to meet business requirements.

4.1 Determine the business rules for a required database design.

4.2 Create entity-relationship diagrams to visually model data.

4.3 Transform a conceptual data model into a logical database model.

4.4 Normalize database tables to Third Normal Form.

4.5 Install and configure a database server.

4.6 Implement a physical database design.

5. Use the structured query language (SQL) to enter, retrieve, and maintain data within databases.

5.1 Write SQL statements to create tables and enter data.

5.2 Write simple SQL statements to retrieve data from a single table.

5.3 Manage tables using SQL statements.

5.4 Write advanced queries to retrieve data from multiple tables.

5.5 Write nested SQL sub-queries.

6. Perform database administration to ensure data integrity and security.

6.1 Install and configure database servers.

6.2 Secure database access.

6.3 Control database access with user accounts and passwords.

6.4 Describe the backup and recovery facilities of DBMSs.

6.5 Validate user input at both the application layer and database layer.

Section 3:

Assessment Categories:

Assignments	30%
Group Project	30%
Tests and exams	30%
Professionalism	10%

Research Component? ☐ Yes ☒ No

Section 4:

(For administrative use only)

Is this course new? ☐ Yes ☒ No

Is this course replacing an existing course(s)? ☐ Yes ☒ No

If this course is replacing another, please record the name and code of the old course:

Course equivalents: NONE

Note: See Quality Procedure A01 for more details.

Catalog Year of Original Course Implementation: 2011

Catalog Year of Current Version Implementation: 2015

Revision level: 3 **Version:** 3 **Date:** June/2016 **Authorized by:** MLGJ

Accreditation and or Supporting Documents: National Technology Benchmarks: Canadian Council of Technicians & Technologists; Discipline: Information Technology; Level: Technologist

Additional Information: None

Subject matter expert(s): Lino Forner

Approved by: (Program Manager)

Paul Murnaghan Date Approved: **2016-06-30**

Approved by: (Curriculum Consultant)

Mary Lou Griffin-Jenkins Date Approved: **2016-06-30**