COURSE OUTLINE

Section 1:

Course Title: Basics of Programming

Course Code: CPRG-1000

Course Description: A thorough introduction to the basics of computer programming for those with little or no programming experience. Students acquire introductory skills in problem analysis, solution design and program construction.

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

Course Value: Outcome hours OR 3 Credit(s) 60 (45 Class, 15 Lab) Hours

Pre-requisites: NONE

Co-requisites: NONE

Section 2:

Learning Outcomes and Competencies

1. **Explain major components of software development.**
   - 1.1 Explain the history of programming languages.
   - 1.2 Identify major types of programming approaches and languages
2. **Use problem solving techniques to design programming solutions.**
   - 2.1 Describe a problem solving process.
   - 2.2 Use UML flowcharting to improve program design.
   - 2.3 Use pseudocode to improve program design.
   - 2.4 Apply sequence in basic programs.
3. **Use data structures in high level programming languages.**
   - 3.1 Use variables and constants in program code.
   - 3.2 Use primitive data types.
   - 3.3 Use Strings and numbers.

3.4 Include arithmetic expressions in program code.

4. **Apply logic structures in solutions to more complex programs.**
   - 4.1 Code selection structures.
   - 4.2 Apply Boolean conditions using relational and logic operators.
   - 4.3 Create relational and compounded relational conditions.
5. **Use repetition statements to create looping structures.**
   - 5.1 Apply loop-control techniques.
   - 5.2 Compare pre-test, post-test, and fixed iteration repetition structures.
   - 5.3 Code single and nested loop structures.
6. **Build functions improve program design.**
   - 6.1 Code user-defined functions to allow code reuse.
   - 6.2 Differentiate between value-returning and void functions.
   - 6.3 Explain the movement of data between main program and functions.
   - 6.4 Describe scope and lifetimes of variables in a program.

Section 3:

Assessment Categories:	Assignments and projects	40%
	Theory tests	20%
	Practical tests	40%

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: 2016

Catalog Year of Current Version Implementation: 2016

Revision level: 3 **Version:** 1 **Date:** Dec/16 **Authorized by:** mlgj

Accreditation and or Supporting Documents: None

Additional Information: None

Subject matter expert(s): BJ MacLean, Don Bowers, Chris Arsenault

Approved by: (Program Manager)

Paul Murnaghan Date Approved: **2016-12-06**

Approved by: (Curriculum Consultant)

Mary Lou Griffin-Jenkins Date Approved: **2016-12-06**