**Assessment Plan**

**Pre-Degree Programme: Computer Programming (C20013)**

**Award Code: ?**

**Award Title: ?**

**Module Listing**

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| **Code** | **Title** | **Level** | **Credit Value** |
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| C20013 | Computer Programming | 5 | 1 |
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**Computer Programming**

**Level 5 C20013**

Unit 1 Programming Constructs

**10.1.1** Define a program Examination (Theory)

**10.1.2** Define a programming language Examination (Theory)

**10.1.3** Identify the different generations of programming languages Examination (Theory)

**10.1.4** Describe the relative advantages and disadvantages of each generation Examination (Theory)

**10.1.5** Distinguish between systems software and application software Examination (Theory)

**10.1.6** List example of system software Examination (Theory)

**10.1.7** List examples of application software Examination (Theory)

**10.1.8** List the uses of an editor Examination (Theory)

**10.1.9** Use an editor to write simple program text Assignment 1/Assignment 2

**10.1.10** Use standard editor facilities to include Examination (Practical)

|  |  |  |
| --- | --- | --- |
|  | * Find and replace * Block copy * Block insertion * Block deletion |  |

**10.1.11** Lay out program text ledgibly Assignment 1/Assignment 2

**10.1.12** Indent program text efficiently Assignment 1/ Assignment 2

**10.1.13** Document the program code Assignment 1/ Assignment 2

**10.1.14** Distinguish between a compiler and an interpreter Assignment 1/ Assignment 2

**10.1.15** Use a compiler to create executable code Assignment 1/ Assignment 2

**10.1.16** Execute a program and enter requested data Assignment 1/ Assignment 2

**10.1.17** Understand the use of the following programming constructs: Examination (Theory)

|  |  |  |
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|  | * Input/output * Cursor and screen handling * Assignment statement |  |

**10.1.18** Explain what a variable is Examination (Theory)

**10.1.19** Distinguish between different simple data types such as integer, real and boolean Examination (Theory)

**10.1.20** Explain the syntax and semantics of a conditional statement Examination (Theory)

**10.1.21** Solve problems using an if .. statement Assignment 1/Assignment 2

**10.1.22** Explain the syntax and semantics of an iteration (loop) statement Examination (Theory)

**10.1.23** Solve problems which require a loop construct as a solution Assignment 1/Assignment 2

**10.1.24** List the stages in constructing a loop Examination (Theory)

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|  | * Initialize values of variables * Place guard on loop * Develop body of loop * Progress toward termination |  |

**10.1.25** Write code to read data and process it Assignment 1/ Assignment 2

**10.1.26** Explain the role of a sentinel Examination (Theory)

**10.1.27** Devise an outline schema for processing list Examination (Theory)

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|  | e.g. read(x)  while x < > sentinel do  begin  process x  read(x)  end |  |

**10.1.28** Explain the top-down development technique Examination (Theory)

**10.1.29** Use the top-down technique to devise a program to solve a simple problem Examination (Theory)

**10.1.30** Explain the need for data validation Examination (Theory)

**10.1.31** Define the boolean operators: and, or and not Examination (Theory)

**10.1.32** Construct compound boolean expressions Examination (Theory)

**10.1.33** Evaluate the truth table of compound boolean expressions Examination (Theory)

**10.1.34** Solve problems using boolean expressions Assignment 1/ Assignment 2

**10.1.35** Design data to test all the programming statements Assignment 1/ Assignment 2

**10.1.36** Test written programs with relevant data to check that the outputs are correct Assignment 1/ Assignment 2

Unit 2 Array processing

**10.2.1** Explain why the array data structure is necessary Examination (Theory)

**10.2.2** Define a linear (1-D) array Examination (Theory)

**10.2.3** Distinguish between the value of an array element and its corresponding index Examination (Theory)

**10.2.4** Use arrays of different data types Assignment 1/ Assignment 2

**10.2.5** Construct loops to process the elements in an array Assignment 1/ Assignment 2

**10.2.6** Write a program to search (linearly) for an element in an array Assignment 2

**10.2.7** Solve problems whose solution requires the use of an array Assignment 1/ Assignment 2

**Unit 3 Character and String Processing**

**10.3.1** Explain the ASCII table Examination (Theory)

**10.3.2** Explain and list example of control characters Examination (Theory)

**10.3.3** Justify the statement: the ASCII table is an ordinal set of valuesExamination (Theory)

**10.3.4** Explain the role of the extended ASCII set Examination (Theory)

**10.3.5** Write simple programs to process the character setAssignment 2

**10.3.6** Use the extended character set to draw graphical shapesAssignment 2

**10.3.7** Define a stringExamination (Theory)

**10.3.8** List the relational operators for strings Examination (Theory)

**10.3.9** Define the length of a string Examination (Theory)

**10.3.10** Distinguish between the length of a string and its dimension Examination (Theory)

**10.3.11** Write programs to process text data in the form of strings Assignment 2

**Unit 4 Procedures and Functions**

**10.4.1** Explain the need for procedures Examination (Theory)

**10.4.2** Define a procedure Examination (Theory)

**10.4.3** Write down the standard syntax for a procedure definition in C Examination (Theory)

**10.4.4** Write simple procedures without using parameters Assignment 2

**10.4.5** Write programs to test a given procedure Assignment 2

**10.4.6** Explain scope rules of variables Examination (Theory)

**10.4.7** Take a sample program and for each variables declared, identify its scope Examination (Theory)

**10.4.8** Define a function Examination (Theory)

**10.4.9** Distinguish between user defined functions and standard library functions Examination (Theory)

**10.4.10** Write expressions which use standard functions Assignment 2

**10.4.11** Write user defined functions Assignment 2

**10.4.12** Test user defined functions Assignment 2

**10.4.13** Explain the difference between a function and a procedure Examination (Theory)

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|  |  | | **Codes A=Assignment, S=Skills Demo, P=Presentation, E=Exam Pr=Project** | | | | | | | | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |
| **Pre-Degree Programme: Mathematics (C20139) & Web Authoring (C20148)** | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Module** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **C20013** | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **A1** | **A2** |  |  |  | **E** |  |  |  |  |  |
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| ***Note: These dates are guidelines only and subject to change*** | | | | | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |