Programming Concepts (A13552)

Short Title: Programming Concepts
Department: Computing and Mathematics
Credits: 5 **Level:** Introductory

Description of Module / Aims

This module will provide the student with an introduction to programming concepts. The student is introduced to fundamental programming techniques and should gain confidence in producing simple logical structures.

Programmes

		stage/semester/status
PROG-0093	BSc in Information Technology (WD_KINFT_D)	1 / 1 / M
	BSc in Computing (ACCS) (WD_SR16IT_1)	1 / 1 / M

Indicative Content

- Program design
- Introduction to programming concepts: data types; variables; data input and output; arithmetic operators
- Introduction to selection
- Introduction to iteration
- Introduction to methods
- Introduction to arrays

Learning Outcomes

On successful completion of this module, a student will be able to:

1. Apply problem solving approaches suitable to the programming discipline.
2. Apply the principles of selection, conditions and iterations to small programming applications.
3. Construct small applications controlled by methods.
4. Use arrays appropriately in small applications.

Learning and Teaching Methods

- This module will be presented by a combination of lectures and computer-based practicals whilst capitalising on a web-enhanced learning environment.
- The lectures will be used to introduce new topics and their related concepts.
- The practical element is intended to provide the student with the skills and confidence to program simple applications.

Assessment Methods

	Weighting	Outcomes Assessed
Continuous Assessment	100%	
Practical	30%	1,2
Practical	70%	1,2,3,4

Assessment Criteria

<40%: The inability to write, run, test and debug small applications. Inability to understand and explain the workings of small applications.

40%–49%: The ability to write, run, test and debug small applications. Ability to understand and explain the workings of small applications.

50%–59%: All of the above and in addition can correctly choose appropriate constructs and approaches.

60%–69%: All the above and in addition be able to apply common solutions to new problems.

70%–100%: All the above to an excellent level and begin to demonstrate an understanding of the concept of effective solutions.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	24	12
Practical	36	12
Independent Learning	75	111

Essential Material(s)

- "Code Academy." http://www.codecademy.com/

Supplementary Material(s)

- Vickers, P. *How to Think Like a Programmer: Problem Solving for the Bewildered.* New York: CENGAGE, 2008.

Requested Resources

- Room Type: Computer Lab