

Module specification

1. Factual information			
Module title	TM112: Introduction to Computing and Information Technology 2	Level	Undergraduate
Module tutor		Credit value	30
Module type	Taught	Notional learning hours	8

2. Rationale for the module and its links with other modules

This module will further develop and extend the skills and knowledge that students will have built up by studying its partner module TM111. The overall focus of TM112 is on developing the students' problem solving skills.

3. Aims of the module

This module aims to:

- Help students to practice the use of computing and information technologies to solve problems.
- Explore a variety of information technologies, from basic computer architecture, cloud computing, mobile/wireless and location-based computing Introduces the students to algorithmic thinking and problem-solving skills using examples from everyday life.
- Enhance student's knowledge about implementing solutions to simple problems in a visual programming.
- Focus on how to examine computing and information technology problems and solutions in their real-world context, with a focus on information security
- Develop numeracy skills (including algebra) in the context of information technologies and programming activities
- Prepare the student for further academic study by helping him develop his study skills.

4. Pre-requisite modules or specified entry requirements

The student should have completed the study of the TM111 module.

5. Intended learning outcomes	
A. Knowledge and understanding	Learning and teaching strategy
<p>A1. Understand the fundamental principles, concepts and techniques underlying Computing and IT.</p> <p>A2. Identify a range of models to support the analysis and design of Computing and IT systems</p> <p>A3. Know how to implement solutions to simple problems using Python programming language.</p> <p>A4. Be aware of the of the range of situations in which Computing and IT systems are used, the ways in which people interact with them, and the possibilities and limitations of such systems</p> <p>A5. Understand the ethical, social and legal issues that can be associated with the development and deployment of Computing & IT systems</p> <p>A6. Describe major trends in Computing and IT and of the implications of these trends</p>	<p>The methods of instruction may include, but are not limited to :</p> <ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • Class discussions • Topic-related activities • Independent study • Forums on the LMS • Office hour discussions • Feedback and guidance on TMA and MTA • Module textbook and support video material

B. Cognitive skills	Learning and teaching strategy
<p>B1. Evaluate key computing and IT concepts in a range of contexts.</p> <p>B2. Apply appropriate techniques and tools for abstracting, modelling, problem solving, designing and testing computing and IT systems.</p> <p>B3. Compare, contrast, critically analyze and refine specifications and implementations of software systems and/or simple hardware systems.</p> <p>B4. Carry out a project in computing and IT that applies and extends student's knowledge and understanding, and critically reflect on the processes involved and the outcomes of student's work.</p>	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • Class discussions • Independent study • Forums on the LMS • Feedback and guidance on TMA and MTA • Module textbook and support video material

C. Practical and professional skills	Learning and teaching strategy
<p>C1. Communicate information, arguments, ideas and issues clearly and in appropriate ways, bearing in mind the audience for and the purpose of your communication.</p> <p>C2. Use appropriate numerical and mathematical skills to carry out calculations and analyze data.</p> <p>C3. Work independently, planning, monitoring, reflecting on and improving your own learning</p> <p>C4. Demonstrate study skills at a level appropriate to higher education, such as study planning, learning from feedback and reading actively</p>	<p>The methods of instruction may include, but are not limited to :</p> <ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • Class discussions • Independent study • Forums on the LMS • Feedback and guidance on TMA and MTA • Module textbook and support video material

D Key transferable skills	Learning and teaching strategy
<p>D1. Evaluate computing and IT systems, using appropriate simulation and modelling tools where appropriate</p> <p>D2. Use a range of resources to help you develop as an independent learner.</p> <p>D3. Use information literacy skills, computers and software packages appropriate to the workplace.</p> <p>D4. Communicate appropriately with your tutor and other students using email, online conferences and forums.</p>	<p>The methods of instruction may include, but are not limited to :</p> <ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • Class discussions • Independent study • Forums on the LMS • Feedback and guidance on TMA and MTA • Module textbook and support video material

6. Indicative content.

The module is delivered by means of three interleaved themes. Each of the themes fits in with the overall problem solving narrative, but with a focus on a particular knowledge area and skills set.

Theme 1: The first theme, 'Essential information technologies', focuses on key concepts in hardware, cloud, mobile and wireless computing. Throughout this theme, numerical problem-solving skills are central.

Theme 2: The second theme, 'Problem solving with Python', rehearses key programming concepts (variables, selection, iteration, ..., functions, ...) in the context of the text-based Python programming language. Analytical problem-solving skills are at the heart of this theme.

Theme 3: The third theme, 'Information technologies in the real world' investigates ethical, social and legal implications of Computing and IT solutions. Communication skills, including the ability to understand and construct arguments, are at the heart of this theme.

7. Assessment strategy, assessment methods and their relative weightings

TMA Work: 20%
MTA: 30%
Final Exam: 50%

8. Mapping of assessment tasks to learning outcomes																		
Assessment tasks	Learning outcomes																	
	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
TMA'S	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MTA	✓	✓	✓	✓			✓	✓	✓	✓		✓		✓	✓			
End of Semester Exam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓			

9. Teaching staff associated with the module
Name and contact details
Eng. Ahmad Mikati

10. Key reading list				
Author	Year	Title	Publisher	Location
Module adopted from OU, UK. It will be finalised by OU, UK by October 2017. Suggested /Preferred books :		Using Information Technology	McGraw Hill	2015
		Introduction to	MIT Press.	Second edition, 2016

10. Key reading list				
Author	Year	Title	Publisher	Location
		Computation and Programming using Python		

11. Other indicative text (e.g. websites)
https://lms.arabou.edu.kw