MODULE TITLE	**Outside the box: Computer Science Research and Applications**	**CREDIT VALUE**	**15**
MODULE CODE	**ECM2427**	**MODULE CONVENER**	**Dr David Wakeling (Coordinator)**

DURATION: TERM	**1**	**2**	**3**
DURATION: WEEKS	**0**	**11**	**0**

Number of Students Taking Module (anticipated)	**97**

DESCRIPTION - summary of the module content

This module gives you a chance to explore the breadth and depth of Computer Science beyond the core technical content of the main syllabus and to investigate some of the current research in Computer Science and ways in which Computer Science is used to solve problems in other areas. It will explore some of the frontiers of research in the department and, through lectures by specialists in other fields, will introduce you to some of the uses of Computer Science methods in business, the sciences, social sciences and humanities.
This module has ECM1410 and ECM1416 as pre-requisites

AIMS - intentions of the module

This module aims to introduce students to current Computer Science beyond the confines of the main syllabus. On one side it will introduce you to some of the research into new ideas in Computer Science, on the other it will explore some applications where Computer Science is essential. You will learn about the nature and purpose of research, some current research problems, the methods employed to tackle them, and how the results are evaluated. You will also learn about some of the ways existing Computer Science techniques and technologies are applied to solve problems outside Computer Science, particularly large-scale computing applications.â€¨
You will demonstrate what you have learnt by producing an in-depth review on one of the topics covered by the seminars, and in groups, you will also find out about a current topic of Computer Science and technology and make a presentation on it.

INTENDED LEARNING OUTCOMES (ILOs) (see assessment section below for how ILOs will be assessed)

On successful completion of this module ***you should be able to***:â€¨â€¨

Module Specific Skills and Knowledgeâ€¨â€¨
1. describe scientific and industrial problems, and their resolution with Computer Science techniques;â€¨â€¨
2. appreciate the diverse range of problems confronted by Computer Scientists;â€¨â€¨
3. compare and contrast different potential solutions to a Computer Science problem;â€¨â€¨
4. describe in depth areas of research within Computer Science.â€¨â€¨
Discipline Specific Skills and Knowledgeâ€¨â€¨
5. systematically break down a problem into its components;â€¨â€¨
6. recognise how different problem domains may use the same techniques and solutions;â€¨â€¨
7. appreciate how and why Computer Science is a subject in which active research is being pursued at both a practical and a theoretical level;â€¨â€¨
8. appreciate the nature of academic research and how it differs from e.g., commercial enterprise.â€¨â€¨â€¨
Personal and Key Transferable / Employment Skills and Knowledgeâ€¨â€¨
9. work in a teamâ€¨â€¨
10. present and synthesise complex ideas orally;â€¨â€¨
11. present and synthesise complex ideas in a written form.â€¨â€¨
12. use the library and the internet to follow up references in researching a topic of interest;â€¨â€¨
13. use standard referencing styles for attribution of ideas and results;â€¨â€¨
14. write a detailed review of a specific topic of interest.

SYLLABUS PLAN - summary of the structure and academic content of the module

- what Computer Science research is;
â€¨â€¨- reasons for conducting Computer Science research;â€¨â€¨
- the frontiers of Computer Science;â€¨â€¨
- why understanding Computer Science is important for applications;
â€¨â€¨- how to find information in libraries and on the internet;
â€¨â€¨- the elements of a good presentation;â€¨â€¨
- how to write about and reference other people's work;â€¨â€¨
- an introduction to the LaTeX typesetting language;â€¨â€¨
- a variety of topics based on the current research interests of lecturers;â€¨â€¨
- a variety of topics based on the academic and industrial applications of Computer Science.

LEARNING AND TEACHING

LEARNING ACTIVITIES AND TEACHING METHODS (given in hours of study time)

Scheduled Learning & Teaching Activities	33.00	**Guided Independent Study**	114.00	**Placement / Study Abroad**	0.00

DETAILS OF LEARNING ACTIVITIES AND TEACHING METHODS

Category	Hours of study time	Description
Scheduled learning and teaching	27	Lectures
Scheduled learning and teaching	6	Group supervisions and group presentation sessions
Guided independent study	60	Assessed work
Guided independent study	54	Wider reading

ASSESSMENT

FORMATIVE ASSESSMENT - for feedback and development purposes; does not count towards module grade

Form of Assessment	Size of Assessment (e.g. duration/length)	ILOs Assessed	Feedback Method

SUMMATIVE ASSESSMENT (% of credit)

Coursework	100	Written Exams	0	Practical Exams	0

DETAILS OF SUMMATIVE ASSESSMENT

Form of Assessment	% of Credit	Size of Assessment (e.g. duration/length)	ILOs Assessed	Feedback Method
Literature Review	60	Literature review report	1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14	Written
Presentation	40	Video or live presenation plus slides	1, 2, 3, 4, 5, 7, 9, 10, 12	Oral or written in feedback sheet

DETAILS OF RE-ASSESSMENT (where required by referral or deferral)

Original Form of Assessment	Form of Re-assessment	ILOs Re-assessed	Time Scale for Re-assessment
Literature Review	Literature review from original topic list	1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14	Submit in August ref/def period
Presentation	Literature review on topic outside of seminars	1, 2, 3, 4, 5, 7, 11, 12, 13, 14	Submit in August ref/def period

RE-ASSESSMENT NOTES

Reassessment will be by coursework in the failed or deferred element only, except if a student has failed/deferred the group presentation, when they will have to do a review on the topic covered in their group presentation. For referred candidates, the module mark will be capped at 40%. For deferred candidates, the module mark will be uncapped.

RESOURCES

INDICATIVE LEARNING RESOURCES - The following list is offered as an indication of the type & level of information that you are expected to consult. Further guidance will be provided by the Module Convener

Basic reading:

ELE: http://vle.exeter.ac.uk/

Web based and Electronic Resources:

Other Resources:

Reading list for this module:
There are currently no reading list entries found for this module.

CREDIT VALUE	15	ECTS VALUE	7.5
PRE-REQUISITE MODULES	ECM1410, ECM1416		
CO-REQUISITE MODULES			
NQF LEVEL (FHEQ)	6	AVAILABLE AS DISTANCE LEARNING	No
ORIGIN DATE	Tuesday 10 July 2018	LAST REVISION DATE	Wednesday 08 February 2023
KEY WORDS SEARCH	Computer Science research; applied computing; problem solving using computers; industrial problems; scientific problems.		