Module Specification

Critical Thinking and Innovation [TSI]

Version: 2023-24, v3.0, 06 Dec 2023

Contents

Part 1: Information

Module title: Critical Thinking and Innovation [TSI]

Module code: UFCE81-12-M

Level: Level 7

For implementation from: 2023-24

UWE credit rating: 12

ECTS credit rating: 6

College: College of Arts, Technology and Environment

School: CATE School of Computing and Creative Technologies

Partner institutions: Transport and Telecommunication Institute

Field: Computer Science and Creative Technologies

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Responding to the modern challenges – with its complex environmental, social and economic pressures – requires young people to be creative, innovative, enterprising and adaptable, with the motivation, confidence and skills to use critical and creative thinking purposefully.
This capability combines two types of thinking: critical thinking and creative thinking. Though the two are not interchangeable, they are strongly linked, bringing complementary dimensions to thinking and learning.

Critical thinking is at the core of most intellectual activity that involves students learning to recognise or develop an argument, use evidence in support of that argument, draw reasoned conclusions, and use information to solve problems. Creative thinking involves students learning to generate and apply new ideas in specific contexts, seeing existing situations in a new way, identifying alternative explanations, and seeing or making new links that generate a positive outcome.

Features: Not applicable

Educational aims: The aim of this course is to equip students with the skills of exercising critical thought to develop and support their views and evaluate arguments in academic debate and practical affairs of everyday life.

Outline syllabus: Critical thinking. Main definitions.

Levels of intellectual skill: the thinking triangle.

Critical Thinking Standards.

Critical thinking strategies.

Barriers to Critical Thinking.

Thinking Skills.

The role of critical thinking in project management.

Tools to Develop Better Critical Thinking Skills.

System approach for solution of problems.

Mind map as holistic tool for critical thinking.

TRIZ as methodology for innovative solutions for problem solving.

Emerging technologies for innovative solutions for problem solving.

Part 3: Teaching and learning methods

Teaching and learning methods: Learning and teaching will be provided to students in two forms: lectures and practical classes. During lectures, theoretical aspects of the course will be provided to students by the teaching staff. Lectures will be supported by presentation published and available to the students on e.tsi.lv under the module section. Also, additional materials, like publications on the internet, videos, case-studies etc will be presented in e.tsi.lv.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Explain the key attitudes and skills involved in critical thinking.

MO2 Apply critical thinking skills to examine arguments in debates and texts.

MO3 Identify fallacious reasoning in everyday life and correct the fallacies identified.

MO4 Formulate the main problem and actualise setting goals and objectives of the research in terms of systems theory.

MO5 Apply a systematic approach to the analysis and synthesis of complex systems for problem solutions.

Hours to be allocated: 120

Contact hours:

Independent study/self-guided study = 112 hours

Face-to-face learning = 48 hours

Total = 160

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://rl.talis.com/3/uwe/lists/4C199AE9-DA21-1580-B8B6-4F519268658A.html?lang=en-gb&login=1

Part 4: Assessment

Assessment strategy: The assessment strategy is build around the portfolio item, which includes set of the exercises related with one-two specific topics of the course. The portfolio contains different deliverables, like discussion of case studies, delivery of mini-projects etc. A part of the exercises would be completed individually by the students, to develop student personal skills, while some part would be completed in the frame of the team works. Such combination would allow to assess gained individual skills and assess soft skills (as example in frame of discussion and debates)

A resit would include rework of the submissions.

Assessment tasks:

Portfolio (First Sit)
Description: Four case studies requiring students to research, discuss and defend a response.
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

Portfolio (Resit)
Description: Four case studies requiring students to research, discuss and defend a response.
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Computer Science (Data Analytics and Artificial Intelligence) {Double Degree} [TSI] MSc 2023-24