Module Specification

Computer Systems Structures [TSI]

Version: 2023-24, v2.0, 07 Aug 2023

Contents

Part 1: Information

Module title: Computer Systems Structures [TSI]

Module code: UFCFCW-24-0

Level: Level 3

For implementation from: 2023-24

UWE credit rating: 24

ECTS credit rating: 12

College: College of Arts, Technology and Environment

School: CATE School of Computing and Creative Technologies

Partner institutions: None

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: This module provides an introduction to the components of a modern computer system.

Features: Not applicable

Educational aims: The aim of the course is to provide students with foundational knowledge of the structures and components that make up a modern computer

systems. Based on this knowledge, students will be in a strong position to go on to develop effective and efficient software applications.

Outline syllabus: •Von Neumann Computer Structure.
•Computer Arithmetic Fundamentals.
•Logic and Circuitry Fundamentals.
•Instruction Set Architecture.
•Computer functional organisation.
•control units.
•Computer operational units.
•Internal memory.
•Computer external memory.
•Computer virtual memory. Memory protection.
•Computer intercommunication.
•Input/output systems.
•Modern tendencies computer processors architecture.
•Computer systems and networking.
•Computer Logical Fundamentals.
•Computer Circuitry Fundamentals.
•Digital Circuitry Synthesis and Analysis Fundamentals.
•Parallelism as a Basis of High-Performance Computing.
•Realization of Parallelism on the Single Processor Base.

Part 3: Teaching and learning methods

Teaching and learning methods: Learning and teaching will be provided to students in following forms: lectures, labs, tests. 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 code examples, text books, publications on the internet, videos etc will be presented in e.tsi.lv.
During labs, each student receives an individual task to perform.

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

MO1 Identify the basic elements of hardware and explain their functions and how they fit together to form a different computer architectures.

MO2 Explain and demonstrate how data is represented, manipulated and stored within a computer system.

MO3 Develop and test simple programs for microprocessors systems.

Hours to be allocated: 240

Contact hours:

Independent study/self-guided study = 192 hours

Face-to-face learning = 128 hours

Total = 320

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/A1851884-C45A-1309-4633-9B981361EDE4.html?lang=en-gb&login=1

Part 4: Assessment

Assessment strategy: There are 3 assessment tasks:

Part 1) Practical assignments (individual)
Part 2) In-class tests (control work) midterm tests.
Part 3) Final examination test,

Students are required to resit failed tasks during the resit period.

Assessment tasks:

In-class test (First Sit)
Description: Series of in-class tests (MCQ)
Weighting: 30 %

Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Practical Skills Assessment (First Sit)
Description: Set of practical tasks, including report
Weighting: 35 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Examination (First Sit)
Description: Final Examination (1 hour)
Weighting: 35 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3

In-class test (Resit)
Description: Series of in-class tests (MCQ), students are required to resit only the tests they failed.
Weighting: 30 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Practical Skills Assessment (Resit)
Description: Set of practical tasks, including report.
Weighting: 35 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Examination (Resit)

Description: Final Exam (1 hour)
Weighting: 35 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Computer Science and Software Development {Double Degree} {Foundation} [TSI] BSc (Hons) 2023-24

Computer Science and Software Development {Double Degree} {Foundation} [TSI] BSc (Hons) 2023-24

Computer Science and Software Development {Double Degree} {Foundation} [TSI] BSc (Hons) 2022-23