COURSE SPECIFICATION DOCUMENT

Academic School / Department: Dept of Science, Innovation & Technology

Programme: Computer Science

***FHEQ* Level:** 4

Course Title: Systems Architecture

Course Code: COMP 4103

Student Engagement Hours: 160
Timetabled Hours: 45
Guided Learning Hours: 15
Independent Learning Hours: 100

Credits: 16 UK CATS credits
8 ECTS credits
4 US credits

Course Description:

This course provides students with an understanding of key structures and mechanisms of operating systems: Linux, UNIX, Android and Windows for corporate, personal and mobile systems. The course focusses on both the design issues and fundamental principles.

Prerequisites:

None

Aims and Objectives:

By the end of this course, students will have an understanding of how operating systems are designed and the fundamental principles behind them. Students will explore operating systems including Linux, UNIX, Android and Windows systems with a view to understanding and programming for them.

Programme Outcomes:

L4 AI, BI, CI, DI

A detailed list of the programme outcomes are found in the Programme Specification. This is located at the archive maintained by Registry and found at: https://www.richmond.ac.uk/programme-and-course-specifications/

Learning Outcomes:

By the end of this course, successful students should be able to:

- Understand how the variety of computer systems in corporate, personal, and mobile settings impact on how operating systems are designed and built.
- Demonstrate how the various parts and aspects of an operating system work
- Analyse the constraints of any operating system within the context of developing new programmes.
- Plan programmes for the strengths and trade-offs of different operating systems and platforms.

Indicative Content:

- Understanding computer systems
- Operating systems and their trade-offs
- Processes and control
- Memory Management
- Scheduling
- Input, output and files
- OS security
- Virtual machines
- Independent, less used OS eg. Ubuntu, Solaris

Assessment:

This course conforms to the University Assessment Norms approved at Academic Board and located at: https://www.richmond.ac.uk/university-policies/

Teaching Methodology:

This course will be delivered face to face through a combination of lectures and interactive sessions. In addition to classroom activities, there are guided learning elements that are tutor led and arranged through Blackboard. These activities can be asynchronous online sessions, flipped classrooms, set readings with discussion boards or set guest lectures for example. Set activities are monitored by the instructor to ascertain student engagement. Students are encouraged to prepare for class and to play an active part, to raise questions, following-up ideas and interact with a wide range of provided material.

Indicative Text(s):

William Stallings, W. (2017) *Operating Systems: Internals and Design Principles*. 9th edn. Pearson.

Additional Text:

McHoes, A. and Flynn, I. (2017) *Understanding Operating Systems.* 8th edn. Boston: Cengage.

See syllabus for complete reading list.

Change Log for this CSD:

Nature of Change	Date Approved & Approval Body (School or AB)	Change Actioned by Registry Services
First Edition	Nov 2024	