Introduction to the Module

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Course Code: ELEE1119

Course Name: Advanced Computer Engineering

Credits: 30

Module Leader: Seb Blair BEng(H) PGCAP MIET MIHEEM FHEA
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Module Aims

This course aims to help [you] develop an in-depth appreciation of complete computer systems; encompassing hardware, operating systems and software, for advanced embedded applications.

It aims to provide a practical working knowledge of the development processes involved in developing systems that span multiple layers of computer abstraction, allowing [you] to gain the experience of working on complex, multi-dimensional projects.

Module Learning Outcomes

On successful completion of this module a student will be able to:

[1] Design, and reflect critically on the design, of a complete system taking advantage of a broad computer architecture range.

[2] Critically research existing technologies across a wide range of subject areas to determine those most appropriate for a given problem domain.

[3] Demonstrate the ability to construct a complete system, using commercial off-the-shelf components, the can support the solution to a given problem.

[4] Demonstrate the ability to evaluate the performance of themselves and their team members while working in a team environment solving a complex problem

Indicative Content

The content of this course will evolve along with the fast moving field of computer engineering. As an indication, at the outset, the course aims to take [you] through the application of commercial off-the-shelf intellectual property to develop custom, yet standardised, microprocessors on an off-the-shelf development board.

On top of this development board an operating system will be installed to abstract the hardware from the software. On top of the operating system, [you] will be expected to develop specialist software.

Teaching and Learning Activities

Concepts will be introduced in lectures. There is a strong emphasis on taught practical sessions to provide a combined theoretical and practical experience in analysis, design, implementation and testing within one of the specialist computer labs.

Assessments

Remember this is a 30 credit module!

1. Project
    i. A computer engineering project assessed by a pre-recorded video and Viva.
    ii. GitHub repository and Team project
    iii. Dates: Officially released first week of term 2.
    iv. Weighting: 60%
    v. Previous Submissions 2015 to 2019 and 2021 to 2022
2. Exam
    i. 2 hour Unseen closed book exam.
    ii. Weighting: 40%