Advanced Software Engineering Modules for Negotiated Learning Students 2021/22

Dr. Mel Ó Cinnéide

School of Computer Science

University College Dublin

Advanced Software Engineering (ASE) modules

We run a masters programme in **Advanced Software Engineering** for experienced software developers.

The ASE modules are available to NL students as well.

For 2021/22, four ASE modules are running:

Name	Code	Start	Trimester
High Performance Computing	COMP40730	Sep-21	Autumn
Comparative Software Eng Process Frameworks	MIS40850	Sep-21	Autumn
Agent-Oriented Software	COMP40040	Jan-22	Spring
Knowledge-based Techniques for Industrial Systems	COMP40080	Jan-22	Spring

All are **10 credit** modules, and they run **online**.

ASE Pre-requisites

ASE modules are geared at **experienced software developers**.

Participants must have two or more
years experience in professional
software development, subsequent
to their primary degree.

Online Delivery

All ASE modules run online only.

The details will vary from module to module, but online delivery will usually be structured as follows:

* The material is offered online as a number of packages.

* Each package usually comprises lecture slides, study material, a video of the lecturer presenting an overview of the material and assignment work.

* A Teaching Assistant will be available throughout the module to answer questions regarding assignment work either on a group chat or email.

* Regular online Q&A sessions are provided.

COMP40730 High Performance Computing

The module is an introduction to design and development of parallel programs for different parallel architectures mainly in the context of scientific computing.

The module covers the following architectures:
- Vector and superscalar processors (vectorization technique, array libraries);
- Shared-memory multiprocessors, such as multicores (multithreading: OpenMP and Pthreads);
- Distributed-memory architectures, such as clusters (MPI).

Main languages and technologies used: C, Pthreads, OpenMP, MPI

Module Coordinator: Alexey Lastovetsky

MIS40850 Comparative Software Engineering Process Frameworks

This module introduces contemporary Agile approaches to software practice and contrasts them with software engineering process systems or frameworks like CMMI.

The goals of this module are twofold:

1. To develop knowledge and theories dealing with the management, performance and behaviour of collaborative design teams;

2. to integrate the diverse concepts and theories of software practice and process frameworks; to translate these concepts into personal, team, and management practice;

Module Coordinator: Allen Higgins

COMP40040 Agent-Oriented Software

This module comprises an introduction to Agent-Oriented Software Engineering.

This module covers:
- Introduction to main concepts underpinning Multi-Agent Systems;
- Software Development using Agent Programming Languages;
- Overview of Methodologies for Agent-Oriented Software Design.

Knowledge of Java is useful.

Module Coordinator: Rem Collier

COMP40080 Knowledge-based Techniques for Industrial Systems

This module focuses on a variety of knowledge-based techniques with an emphasis on their practical application.

The topics to be covered include:
- Next Generation Semantic Web;
- Building Ontologies;
- The Knowledge-based Enterprise;
- Using Protege to build Semantic Web Ontologies;
- Schemas and Micro-Schemas;
- Knowledge, Triples and SPARQL;
- Case study: DBPedia.org.

Main languages&technology used: Java.

Module is evaluated by project (build your own ontology in Protege) rather than by written examination.

Module Coordinator: Tony Veale

Further Module Information

Browse to e.g.:
www.ucd.ie/modules/comp12345
to find the appropriate **module descriptor.**

If you have further questions
about the module, please
look up and email the
module coordinator.

Agent-Oriented Software (COMP40040)

SUBJECT:	Computer Science
COLLEGE:	Science
SCHOOL:	Computer Science
LEVEL:	4 (Masters)
CREDITS:	10.0
TRIMESTER:	Spring
MODULE COORDINATOR:	Assoc Professor Rem Collier
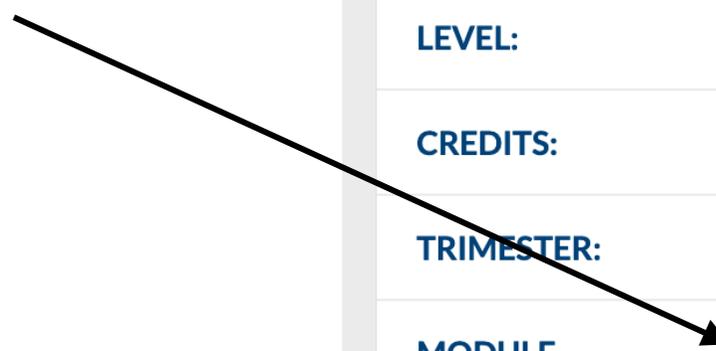
I want to take an ASE module! What to do?

1. Assess the prerequisites. If you don't have at least two years of software development experience in a company, there is little point in applying.

2. Discuss with your NL Advisor.

3. Email the NL Administrator, copying the ASE Director and the NL Director. Sample email on next slide. You will receive a response promptly.

4. Assuming a positive response, add this module to your Module Registration Form and send this to the NL Administrator.

Deadline to apply: The sooner the better, but no later than Sunday, 12/09/2021 at midnight

Sample Email

NL Administrator → **To:** Travis Matthew Grotewold ⌄

ASE Director → **Cc:** Mel Ó Cinnéide ⌄   Rem Collier ⌄   fred cummins ⌄

Subject: ASE module request   ! ↕

From: Mel Ó Cinnéide – m...   **Signature:** None ↕

Message Size: 944 KB

NL Directors →

Hi Travis, |

I'd like to take these ASE modules:
* COMP40040 Agent-Oriented Software
* MIS40850 Comparative Software Engineering Process Frameworks

Summary of relevant experience →

I worked for 3 years as a Java developer with Openet from September 2014 to August 2017. Please find details in attached CV.|

kind regards, …

Full CV (or Linkedin page) →

PDF

CV.pdf
926 KB

Questions?