

COURSE DETAIL

PARALLEL COMPUTING

Country

Ireland

Host Institution

University College Dublin

Program(s)

University College Dublin

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Computer Science

UCEAP Course Number

137

UCEAP Course Suffix**UCEAP Official Title**

PARALLEL COMPUTING

UCEAP Transcript Title

PARALLEL COMPUTING

UCEAP Quarter Units

5.00

UCEAP Semester Units

3.30

Course Description

This course introduces parallel programming and covers the following main topics: 1) Vector and superscalar processors: architecture and programming model, optimizing compilers (dependency analysis and code generation), array libraries (BLAS), parallel languages (Fortran 90). 2) Shared-memory multi-processors and multicore CPUs: architecture and programming models, optimizing compilers, thread libraries (Pthreads), parallel languages (OpenMP). 3) Distributed-memory multi-processors: architecture and programming model, performance models, message-passing libraries (MPI), parallel languages (HPF). 4) Hybrid parallel programming for clusters of mutlicore CPUs with MPI+OpenMP.

Language(s) of Instruction

English

Host Institution Course Number

COMP30250

Host Institution Course Title

PARALLEL COMPUTING

Host Institution Course Details

https://hub.ucd.ie/usis/!W_HU_MENU.P_PUBLISH?p_tag=MODULE&MODULE=COMP30250&ARCH...

Host Institution Campus

Host Institution Faculty

Computer Science

Host Institution Degree

Host Institution Department

Course Last Reviewed

2025-2026

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