F20DP Distributed and Parallel Technologies

COURSE DETAILS
Course Code: F20DP
Full Course Title: Distributed and Parallel Technologies
SCQF Level: 10
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL
Undergraduate: Yes  Postgraduate Taught: No  Postgraduate Research: No
Additional Information:

COURSE AIMS
• To explore technologies and techniques underlying advanced software development for parallel and distributed systems.
• Review the principal abstractions, methods and techniques used in distributed and parallel programming.
• Develop an understanding of parallel programming on heterogeneous architectures including accelerators such as GPUs

LEARNING OUTCOMES – SUBJECT MASTERY
• Understanding of foundational concepts of distributed and parallel software
• Knowledge of contemporary techniques for constructing practical distributed and parallel systems using both declarative and imperative languages
• Appreciation of relationship between imperative and declarative models of parallelism

LEARNING OUTCOMES – PERSONAL ABILITIES
• Critically analyse parallel and distributed problems.
• Generate, interpret and evaluate parallel performance graphs
• Develop original and creative parallel problem solutions
• Demonstrate reflection on core concepts and technologies, e.g. understanding of applicability of, and limitations to, parallel and distributed systems

SYLLABUS
Distributed Technologies: Distribution concepts; low-level, mid-level and high-level distributed technologies; emerging distribution and coordination technologies.
Parallel Technologies: Design of parallel systems, parallel performance analysis; programming heterogeneous systems; practical imperative parallel programming; practical declarative parallel programming

Prerequisites: Academic knowledge of fundamentals of operating systems, computer networks and software engineering equivalent to an ordinary degree in Computer Science, basic knowledge of programming in C
COURSE RELATIONSHIPS
N/A

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