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

## LOCATION AND ASSESSMENT METHODS

| Edi | SBC | Ork | Dub | Malay | IDL | COLL | ALP | OTH | Method     | Weight | Exam Mins | Type       | Diet        | Synoptic Course |
|-----|-----|-----|-----|-------|-----|------|-----|-----|------------|--------|-----------|------------|-------------|----------------|----------------|
| Y   |     |     |     |       |     |      |     |     | Examination| 70     | 120       | Assessment | Semester 2  |                |
| Y   |     |     |     |       |     |      |     |     | Coursework | 30     |           | Assessment | Semester 2  |                |