**F29OC Operating Systems & Concurrency**

**COURSE DETAILS**

**Course Code:** F29OC  
**Full Course Title:** Operating Systems & Concurrency  
**SCQF Level:** 9  
**SCAF Credits:** 15  
**Available as Elective:** No

**DELIVERY LEVEL**

Undergraduate: Yes  
Postgraduate Taught: Yes  
Postgraduate Research: No

**COURSE AIMS**

For the Operating system part: To provide an introduction to operating systems, their basic principles and shell programming.

For the Concurrency part: To introduce the theory and practice of concurrent hardware and software systems

**LEARNING OUTCOMES – SUBJECT MASTERY**

For the Operating systems part:

- Understanding of the concepts and structures present in modern operating systems.

For the Concurrency part:

- Broad and integrated knowledge and understanding of concurrency concepts, techniques and problems
- Critical understanding of predominant concurrency pattern and their implementation on modern architectures
- Hands-on experience

**LEARNING OUTCOMES – PERSONAL ABILITIES**

- Critically evaluate the problematic and concepts related to operating systems.
- Analysis of the different possible solutions to leveraging concurrency for parallel execution.

**SYLLABUS**

For the Operating system part: overview on operating systems concepts and structures, processes, threads, classical inter-process communication problems, memory management
For the Concurrency part: Concurrency, Parallelism, Pthreads. Parallelism Pattern: Pipelining, Data-Parallelism, Nested Data-Parallelism, Flattening, Task-Parallelism, Data-Flow.

### COURSE RELATIONSHIPS

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<th>School</th>
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<td>Data Structures and Algorithms</td>
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<td>Pre-Requisite</td>
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### LOCATION AND ASSESSMENT METHODS

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