

ICT331 Fundamentals of Concurrent Systems

Level: 3

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JAN

Synopsis:

This course introduces you to the basic ideas in concurrent systems. It discusses the basic hardware and software for such systems and examines the nature of a concurrent process as well as multi-threading with a programming language. The course will also look into inter-process communications as concurrent processes inter among themselves. In particular, it will consider the important issue of accessing shared data. As this is a practical course, it will use Java, a programming language commonly used in the industry, for investigating topics such as multi-threading and accessing shared data

Topics:

- The nature of concurrent systems
- Hardware and software support for concurrent systems
- The concept of a process and concurrent processes
- The fundamentals of distributed systems
- Basic inter-process communications
- Accessing shared data and shared implementations

Learning Outcome:

- Illustrate what is a concurrent system
- Differentiate among concurrent, potentially concurrent and non-concurrent systems
- Appraise the role of hardware and operating systems in concurrent processing
- Discuss the characteristics and issues involved in distributed processing
- Show the concurrent processing issues for shared memory systems
- Construct programs involving multi-threading and synchronised concurrent processes

Assessment Strategies - Regular Semester (Evening Class):

Components	Description	Weightage Allocation (%)
Overall Continuous Assessment	PRE-CLASS QUIZ 1	2
	PRE-CLASS QUIZ 2	2
	PRE-CLASS QUIZ 3	2
	QUIZ 1	6
	TUTOR-MARKED ASSIGNMENT 1	18
Overall Examinable Components	Written Exam	70

Total	100
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*The information listed is subject to review and change.