

# ICT332 Concurrent Systems and Applications

**Level:** 3

**Credit Units:** 5 Credit Units

**Language:** ENGLISH

**Presentation Pattern:** EVERY JAN

## Synopsis:

This course focuses on concurrent systems at the application level. It continues the discussion on concurrent systems by looking at inter-process communications in non-shared memory situations. In particular, it will discuss basic client server systems and remote procedure calls. The course will examine concurrent systems issues such system viability and deadlocks. It will also investigate concurrent processing of transactions with interleaved operations. It will end with a discussion of distributed databases and middleware.

## Topics:

- Inter-process communications with non-shared memory
- Client servers and remote procedure calls
- System viability and atomic actions
- Deadlocks in concurrent systems
- Transactions in concurrent systems
- Distributed databases and middleware

## Learning Outcome:

- Examine the issues, problems and solutions related to inter-process communications with and without shared memories
- Appraise concurrency issues over the subject of system viability, including deadlocks and system crashes
- Analyse the implications of interleaving transactions
- Recommend solutions for the problems that arise from interleaving transactions
- Illustrate the requirements in concurrent processing related to databases
- Develop programs using Java facilities for distributed processing

## Assessment Strategies (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	Written Exam	70

Components		
<b>Total</b>		<b>100</b>