

## Integrated information Systems

**Course Name:** Integrated information Systems

**Course Code:** ITF405

**Credit hours:** 3

**Knowledge Domain:** IT Foundations

**Prerequisite(s):** Intelligent Databases (ITF303)

### Learning Objectives

Upon completion of this course, the student will be able to:

1. Grasp information integration concepts including data warehousing, OLAP and mediator-based systems.
2. Acquire the basic elements of transaction processing & concurrency control.
3. Appreciate database recovery aspects.
4. Grasp the basic concepts of distributed databases.

### Learning Outcomes:

1. Grasping the different methods for information integration.
2. Grasping transaction processing concepts including schedules and serializability.
3. Appreciation of the importance of database recovery.
4. Acquaintance with distributed databases, their types, query processing and concurrency control & recovery.

### Overview and Syllabus

Information integration. Data warehousing. Online Analytic Processing (OLAP). Mediator-based Systems. Transaction Processing concepts. Concurrency control. Database recovery techniques. Distributed databases.

### Course Outline

	<b>Topic</b>
1	<b><u>Module 1: Transaction Processing and Concurrency Controls</u></b> <b>Lesson 1:</b> Transaction Management <b>Lesson 2:</b> Concurrency Problems and Serializability <b>Lesson 3:</b> Locking techniques <b>Lesson 4:</b> Concurrency Control without locking
2	<b><u>Module 2: Database recovery techniques</u></b> <b>Lesson 1:</b> Recovery Concepts <b>Lesson 2:</b> Media Recovery

3	<b><u>Module 3: Distributed Databases</u></b> <b>Lesson 1:</b> Basic Distribution Concepts <b>Lesson 2:</b> Transparency Features in Distributed Databases
4	<b><u>Module 4: Information Integration</u></b> <b>Lesson 1:</b> Information Integration Modes <b>Lesson 2:</b> Mediator-based systems
5	<b><u>Module 5: Data Warehouses</u></b> <b>Lesson 1:</b> Basic Concepts <b>Lesson 2:</b> ETL & OLAP
6	<b><u>Module 6: Data Models and DW Design</u></b> Dimensional Modeling OLAP Aggregations and Operations Cubes Implementation and Mining