

**Course Specification**  
**(3103 System Design)**

**Faculty:** HICIT- **Higher Institute for Computers & Information Technology**

**Programme(s) Title:** Under graduate program in Computer Science

**Major or minor element of programme:** Compulsory

**Department offering the programme:** Department of Computer Science

**Department offering the course:** Department of Computer Science

**Academic year / Class:** 3<sup>rd</sup> Year – 1<sup>st</sup> Semester

**Main/Secondary:** Main

**Date of specification approval:** 22/9/2015

**A- Basic Information**

**Title:** System Design

**Code:** 3103

**Weekly Hours:**

**Lecture: 3**

**Exercise:-**

**Practical:3**

**Total: 6**

**B- Professional Information**

**1 - Course Objectives:**

The objective of CS3103 is to give the student the knowledge and practice of how to design the various components of any system, to define the implementation wise aspects of this system.

After completing this course, the student should be able to conduct system design process, design system components, including system inputs, system outputs, system interfaces, system databases, system programs, and finally be able to document the system design results.

**2- Program ILOs Covered by Course**

Program Intended Learning Outcomes			
Knowledge and understanding	Intellectual Skills	Professional and practical skills	General and Transferable skills
a9, a11, a13, a15, a21	b2, b4, b5, b6, b8, b12, b17	c5, c6, c9, c13, c15, c19	d1, d2, d5, d9, d10, d12

**3- Intended learning outcomes of course (ILOs)**

**a- Knowledge and understanding:**

- a1. Understand the various components of the system design, and the definition of the system technical architecture.
- a2. Understand the meaning and guidelines needed to design inputs, outputs, interfaces, databases, system module's and system programs.
- a3. Describe the component's design in a standard documentation.

### **b- Intellectual skills**

- b1. Illustrate the existing technical difficulty, in the current system, tending to be redesigned it.
- b2. Analyze the overall system components under the system architecture.

### **c- Professional and practical skills**

- c1. Design a systems components.
- c2. use the technical data which are collected from system owners and system users for the needed design.

### **D- General and transferable skills**

- d1. Communicate with system owners to gather the required information.
- d2. Work with a team to implement a system and write technical report

## **4 -Contents**

<b>Topic</b>	<b>No. of Hours</b>	<b>Lectures</b>	<b>Tutorial /Practical</b>
Introduction to system design and construction.	12	6	6
System architecture.	12	6	6
Input design.	12	6	6
Output design.	6	3	3
Interface design.	12	6	6
Database design.	12	6	6
Program design.	12	6	6
Course Project.	6	3	3

## **5 -Teaching and learning methods**

- 5.1 Lectures
- 5.2 Tutorial Exercises
- 5.3 Practical Lab
- 5.4 Discussions.

## **6 -Student assessment methods**

- 6.1 Midterm Exam: To assess the knowledge and understanding achieved by the student during the previous weeks.
- 6.2 Final Exam: To evaluate what the student gain at the end of the course, and to assess: the knowledge and understanding, general skills, and intellectual skills.
- 6.3 Course Project: To allow students work in team, and to evaluate knowledge,

understanding, intellectual, and transferable skills.

6.4 Course Work & Quizzes: To keep the student always in the course, and to evaluate knowledge, understanding, intellectual, and transferable skills.

### Assessment Schedule

Assessment	Week #
Mid Term Exam	8
Final Exam	16
Course Project	3-14
Course Work & Quizzes	2-14

### Assessment Weight

Assessment	Weigh %
Mid Term Exam	5%
Final Exam	80%
Course Project	10%
Course Work & Quizzes	5%
<b>Total</b>	<b>100</b>

Course Work & Quizzes: (Short Exams, Assignments, Researches, Reports, Presentations, Class/Project discussion)

## 7 -List of references

### 7.1 -Essential books (text books)

System Analysis and Design, Kenneth E. Kendall & Julie E. Kendall, Prentice-Hall of India, 2001

**Systems Analysis and Design (9th Edition)**, Kenneth E. Kendall & Julie E. Kendall, Prentice-Hall

### 7.3 -Recommended books

Basic System Analysis, Alan Daniels, Don Yeates, 1979

## 8- Facilities required for teaching and learning

- MS Project SW Package for scheduling projects
- MS Power Point SW Package for presentation
- MS Visio SW Package to build the Data flow diagrams
- MS Word SW Package for system documentation preparation

## 9-Course Matrices

### 9.1 Course Content/ILO Matrix

Course Contents	a1	a2	a3	b1	b2	c1	c2	d1	d2
Introduction to system design	√	√							

System Technical Architecture.	√	√	√	√	√	√	√		
Input Design.	√		√	√	√	√	√		
Output Design.	√		√	√	√	√	√		
Interface Design.	√		√	√	√	√	√		
Database Design.	√		√	√	√	√	√		
Program Design.	√		√	√	√	√	√		
Course Project								√	√

## 9.2 Learning Method /ILO Matrix

Learning Methods	a1	a2	a3	b1	b2	c1	c2	c3	d1	d2
Lectures	√	√	√	√	√	√	√	√		
Tutorial Exercises				√	√	√	√	√		
Practical Lab				√	√	√	√	√		
Discussions.				√	√	√	√	√	√	√

## 9.3 Assessment Methods /ILO Matrix

Assessment Methods	a1	a2	a3	b1	b2	c1	c2	c3	d1	d2
Mid Term Exam	√	√	√	√	√	√	√	√		
Final Exam	√	√	√	√	√	√	√	√		
Course Project	√	√	√	√	√	√	√	√	√	√
Course Work & Quizzes	√	√	√	√	√	√	√	√	√	√

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