Frantz Fanon University

Course Title: Digital Logic Design

Course Code: IT304

Credit Hours: 3

Prerequisite(s): None

Mode of Delivery: *Lectures* - preferably interactive (ask questions & discussions)

Instructor(s): Suleiman Gargaare *(MSc in CS, MSc in PM & BSc in IT).*

Course Description, Objectives, and Outcomes

Course Description	This course provides participants with an introduction to digital circuits which is a fundamental part of modern technology what is more is that the participant will understand how number systems operate, what are they and their calculations converting one to another. Basic logic circuits up to advanced building blocks are what is practiced by the software including the course facilities while every student can be able to revise every lecture's notes using the practical software.
Course Objectives	▪ To define the digital system is. ▪ To differentiate between several types of number systems and their conversions. ▪ To apply the laws of digital circuits. ▪ To understand the software used for the digital systems

Course Outcomes	By the completion of the course the students should be able: **I.** To convert one number system to another **II.** To know every logic gate and its truth table **III.** To analyze circuits using K-map

2. Tentative Schedule for Lectures

Week	Topic
1 – 3	**Chapter One: Number Systems** ▪ Binary Numbers ▪ Decimal Numbers ▪ Octal Numbers ▪ Hexadecimal Numbers ▪ Conversions of those Number System with one another
4 – 5	**Chapter Two: Binary Arithmetic** ▪ Addition ▪ Subtraction ▪ Multiplication ▪ Division
6 – 7	**Chapter Three: Logic Gates** ▪ AND gate ▪ OR gates ▪ NOT gate ▪ NAND gate ▪ NOR gate ▪ X-OR gate ▪ X-NOR
8 – 9	**Chapter Four: Boolean Algebra** ▪ Boolean Addition ▪ Boolean Multiplication

	▪ Rules of Boolean Algebra ▪ Laws of Boolean Algebra
10 – 12	**Chapter Five: K – Map** ▪ Two Bit K – Map Table Simplification ▪ Three Bit K – Map Table Simplification

Reference Book:

- ✓ Digital Logic Design, 4th Edition by Brian Holdsworth & Clive Woods