Academic Quality Assurance Department

Course Syllabus Form

College	Information Technology
Department	Computer Science
Program	Computer Science, Data science, IS and MIT

Course Title	Digital circuit design	**Course Number:**	19041231
Year	2024	**Semester:**	2nd semester

Prerequisite(s)	Discrete mathematics
Instructor	Dr. Saleh Salous
Instructor's e-mail	s.salous@ptuk.edu.ps
Office Hours	Sun, Tue, Thu [1-2] Mon, Wed [11-12]

Class Time	Mon, Wed [12.30-2] Sun/Tue/Thu, [1-2] Sun/Tues/Thu, [2-3]	**Classroom:**	E225

Course description	This course will cover Number systems and conversion, Boolean algebra, the assertion level concept; minterm and maxterm expansions, Karnaugh maps, combinatorial logic circuit design, NAND and NOR gate based design. State machines and sequential circuits flip-flops, minimization of state tables, state assignment. Higher-level digital system design using SSI-MSI blocks such multiplexers/decoders, adders, memory and programmable gate arrays; bus oriented systems.
Course Intended Learning Outcomes (CILOs)	At the end of this course, students should be able to 1. describe the physical operation and circuital model of a sensor 2. design simple circuits and implements them on breadboards 3. make records that accurately and clearly present the results obtained from laboratory work and allow them to be easily replicated by a third party. 4. express the algorithm in a programming language that can be executed on a microcontroller.
Textbook(s)	1. M. Morris Mano. Digital Design. 5th Edition, Prentice Hall
Other required material (References):	
Other Resources used (e.g. e-learning, field visits, periodicals, software, etc.)	

Course Teaching Methods

Teaching Method	CILOs
Online Lectures	1,2,3,4

Assessment Type	Details/Explanation of assessment in relation to CILOs	Weight	Date(s)
Mid Exam	1,2	35%	As per college exam timetable
Activities	1,2,3,4	20%	
Final Exam	1,2,3,4	45%	
Total		100%	

Course Intended Learning Outcomes (CILOs)

CILOs On successful completion of the course, students will be able to:	Mapping to Program ILOs			
	a	b	c	d
describe the physical operation and circuital model of a sensor	x			
design simple circuits and implements them on breadboards		x	x	
make records that accurately and clearly present the results obtained from laboratory work and allow them to be easily replicated by a third party.		x	x	x
express the algorithm in a programming language that can be executed on a microcontroller.		x		x

Course Weekly Breakdown

No. of Week	Topics Covered	CILOs	Assessment
2	Chapter 1:	1,4	Mid Exam
2.5	Chapter 2:	1,2	
		1,2,3	
3.5	Chapter 3:	4,2	
		1,2	
Mid Exam			
2.5	Chapter 4:	2,3	Final Exam
2.5	Chapter 5:	1,4	
2	Chapter 6 :	2,4	

Prepared by:	Dr. Saleh Salous	**Signature**	
Head of Department	Dr. Sherin Hijazi	**Signature**	
Date	29/02/2024		