111-2 Full Curriculum of Da-Yeh University

Information			
Title	Experiments of Digital Design	Serial No./ID	0658 /IFI2032
Required/Credit	Required /2	Time/Place	(Mon)234 /H708
Language	Chinese	Grade Type	Number
Lecturer /Full- or Part-time	Tsai Huan-Liang /Full-time	Graduate Class	Non-graduating Class
School System /Dept /Class, Grade	Bachelor /Department of Computer Science and Information Engineering /Class 1, Grade 2		
Office Hour / Place	(Mon) 16:20~17:10, (Tue) 16:20~17:10, (Wed) 16:20~17:10, (Thu) 08:10~09:00 / H715		
Lecturer	n.a.		

Introduction

In this course, students will learn the basic principles of combinations and sequential logic, and understand how to apply the basic digital logic circuits to some basic applications.

Outline

1.Logic gates
2.Boolean functions
3.Combinational logic curcuits
4.Sequential lodic circuits

Prerequisite

none

The Relationship Between Courses and Departmental Core Competencies and Basic Skills

- 1.2 Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- 2.1 Ability to design and conduct experiments, as well as to analyze and interpret data
- 2.2 Ability to propose, conduct, and write the reports of a research project
- 2.3 Ability to dedign and integrate the systems
- 3.1 Ability to cooperate supportively with others and communicate effectively
- 3.3 Ability to engage in life-long learning
- 1.1 Knowledge of mathematics and physics for the application of information engineering
- 3.2 Understanding of engineering ethics and international vision

Teaching Plan						
Core Capability	Weight(%)【A】	Ability index(Performance Indicators)	Teaching Methods	Assessment and Weight	Core Competency Learning Outcomes【B】	Final Exam Grades【C=B*A】
1.2 Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	20	The practical abilities	Practical Operation (Experiment, Machine Operation Lecturing Special Report	Oral Report: 20% Record on Experiment: 20% Course Participation: 40% Written Report: 20%	Total: 100	20
2.1 Ability to design and conduct experiments, as well as to analyze and interpret data	20	The professional abilities	Lecturing Practical Operation (Experiment, Machine Operation Special Report	Course Participation: 40% Record on Experiment: 20% Oral Report: 20% Written Report: 20%	Total: 100	20
2.2 Ability to propose, conduct, and write the reports of a research project	20	The practical abilities	Practical Operation (Experiment, Machine Operation Lecturing Special Report	Oral Report: 20% Record on Experiment: 20% Course Participation: 40% Written Report: 20%	Total: 100	20
2.3 Ability to dedign and integrate the systems	10	The professional abilities	Lecturing Practical Operation (Experiment, Machine Operation Special Report	Course Participation: 40% Record on Experiment: 20% Oral Report: 20% Written Report: 20%	Total: 100	10

3.1 Ability to cooperate supportively with others and communicate effectively	10	The basic abilities	Lecturing Practical Operation (Experiment, Machine Operation Special Report	Course Participation: 40% Record on Experiment: 20% Written Report: 20% Oral Report: 20%	Total: 100	10
1.1 Knowledge of mathematics and physics for the application of information engineering	20	The professional abilities	Lecturing Practical Operation (Experiment, Machine Operation Special Report	Course Participation: 40% Oral Report: 20% Record on Experiment: 20% Written Report: 20%	Total: 100	20

Grade Auditing

Course Participation: 40%
Written Report: 20%
Oral Report: 20%
Record on Experiment: 20%

Book Type (Respect intellectual property rights. Please use official textbooks and do not illegally photocopy others' works.)

Book Type	Book name	Author
Instructor-compiled	數位實驗	大葉大學電機系

Lesson Plan

Weeks	Content	Teaching Methods
1	Instrument introduction & Intellectual Property Protection (use legitimate textbooks only) & Traffic safety Propaganda	Lecturing、 Practical Operation (Experiment, Machine Operation
2	Basic logic gates	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
3	Combinational logic cgates	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report

4	Binary adder and substractor	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
5	Binary adder and substractor	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
6	look-ahead adder	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
7	Comparator	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
8	codr and decoder	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
9	coder and decoder	Special Report
10	seven-segment display	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
11	multiplexer and demultiplexer	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
12	flip-flop	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
13	flip-flop	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
14	counter	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
15	pulse generator	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
16	shift register	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report

17	shift register	Lecturing、 Practical Operation (Experiment, Machine Operation、 Special Report
18	Final Exam	Special Report