111-1 Full Curriculum of Da-Yeh University

Information			
Title	Basic Electricity	Serial No./ID	0703 /IFI1023
Required/Credit	Optinal /3	Time/Place	(Wed)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 1		
Office Hour / Place	n.a.		
Lecturer	n.a.		

Introduction

The objective of the basic electricity class is to familiarize the student with the basic electrical terminology, characteristics of electronic devices, and resistor-network analysis. The topics include the following:
1.Foundation dc concepts
2.Voltage and current
3.Resistance
4.Basic dc analysis of series, parallel and series-parallel circuits
5.Capacitors and capacitance
6.Capacitor charging, discharging, and simple waveshaping circuits

Outline

Topics of instruction:
1.Foundation dc concepts
2.Voltage and current
3.Resistance
4.Basic dc analysis of series, parallel and series-parallel circuits
5.Capacitors and capacitance
6.Capacitor charging, discharging, and simple waveshaping 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	Student Presentation Practical Operation (Experiment, Machine Operation Lecturing Special Report	Oral Report: 20% Course Participation: 20% Final Exam: 40% Written Report: 20%	Total: 100	20
2.1 Ability to design and conduct experiments, as well as to analyze and interpret data	15	The professional abilities	Practical Operation (Experiment, Machine Operation Student Presentation Special Report	Final Exam: 40% Course Participation: 20% Written Report: 20% Oral Report: 20%	Total: 100	15
2.2 Ability to propose, conduct, and write the reports of a research project	15	The practical abilities	Lecturing Practical Operation (Experiment, Machine Operation Student Presentation Special Report	Final Exam: 40% Oral Report: 20% Course Participation: 20% Written Report: 20%	Total: 100	15
2.3 Ability to dedign and integrate the systems	10	The professional abilities	Student Presentation Practical Operation (Experiment, Machine Operation Lecturing Special Report	Oral Report: 20% Course Participation: 20% Final Exam: 40% Written Report: 20%	Total: 100	10

3.1 Ability to cooperate supportively with others and communicate effectively	10	The basic abilities	Student Presentation Practical Operation (Experiment, Machine Operation Lecturing Special Report	Oral Report: 20% Course Participation: 20% Final Exam: 40% Written Report: 20%	Total: 100	10
3.3 Ability to engage in life-long learning	5	The basic abilities	Student Presentation Practical Operation (Experiment, Machine Operation Lecturing Special Report	Oral Report: 20% Course Participation: 20% Final Exam: 40% Written Report: 20%	Total: 100	5
1.1 Knowledge of mathematics and physics for the application of information engineering	20	The professional abilities	Lecturing Practical Operation (Experiment, Machine Operation Student Presentation Special Report	Final Exam: 40% Course Participation: 20% Oral Report: 20% Written Report: 20%	Total: 100	20
3.2 Understanding of engineering ethics and international vision	5	The basic abilities	Lecturing Practical Operation (Experiment, Machine Operation Special Report	Final Exam: 40% Course Participation: 20% Oral Report: 20% Written Report: 20%	Total: 100	5

Grade Auditing

Final Exam: 40%
Written Report: 20%
Course Participation: 20%

Oral Report: 20%

Book Type (Respect intellectual property rights. Please use official textbooks and do not illegally photocopy others' works.)		
Book Type	Book name	Author
Textbook	Engineering Circuit Analysis,	D. Irwin and R. M. Nelms

Lesson Plan		
Weeks	Content	Teaching Methods
1	preparation & Intellectual Property Protection (use legitimate textbooks only) & Traffic safety Propaganda	Lecturing、 Practical Operation (Experiment, Machine Operation
2	sensor switches	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
3	Light sensor	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
4	Temperature and RH	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
5	Temperature and RH	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
6	Magnetic sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
7	Sonic and vibration sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
8	Sonic and vibration sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
9	Report for Mid Exam	Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report

10	gas sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
11	gas sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
12	position sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
13	position sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
14	rotation sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
15	rotation sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
16	mass and pressure sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
17	water level sensors	Lecturing、 Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report
18	Final Exam	Practical Operation (Experiment, Machine Operation、 Student Presentation、 Special Report