



Course Title – Course Code

Department of Electrical & Electronics Engineering Faculty of Engineering

1. Basic Details

Programme: B.ENG

Year: 2014/2015

Total Units: 2

Level: 400L

Taught Semester: First Semester

Instructor:

Ofusori Temidayo

Office: Engineering Building

Phone: +2348036968132

Email: temidayo.ofusori@fuoye.edu.ng

Office Hours: Thursdays, 12pm - 1pm, or by appointment

Reading Materials:

<http://eee.fuoye.edu.ng/400l/f-semester/156-structural-analysis-i-2units.html>

Department: Electrical and Electronics Engineering

Prerequisites: CPE341 (Computer Organization and Architecture)

Prior Knowledge:

- An understanding of computer basics.
- An understanding of basic logic element and switching theory
- An understanding of different types of buses and address modes
- An understanding of minimization and implementation of functions

Lecture Time: 2pm – 4pm

Total Learning Hours: 20

Course Delivery: Face to Face

Lecturers: Engr. T. Ofusori

2. Course Overview

Analogue and Digital Computers (EEE471) consolidates on Computer Organization and Architecture, although a brief history of computer is mentioned, the emphasis is on the elements making up a Computer system. The course spans through the following main topics: Analogue and Digital Computer elements, structures and hardware designs as well as their memory organizations.

3. Course Objectives

- To introduce the students to the elements making up a Computer
- To have detailed understanding of the structure of a Computer
- To understand the basic concept of hardware design and memory organization

4. Intended Learning Outcomes (ILO)

- Ability to Identify the elements of a Computer
- Proper Understanding of the structure of a computer
- Adequate Understanding of the concept of hardware design

5. Course Content

- Analogue computer elements: potentiometers, operational amplifiers function generators e.t.c
- Digital computer structure and elements: CPU, storage , peripheral Arithmetic processes, Hybrid computer systems.
- Hardware design of digital computers: Arithmetic and logic unit, adder, multipliers, dividers, logic and sifting operations
- Floating point arithmetic
- Memory Organization and Addressing: Index registered addressing, interrupt operation, direct memory access, e.t.c

6. Course Schedule

Week	Topics	Reading Assignment
1.	▪ Introduction to Analogue computer	
2.	▪ Analogue computer elements	
3.	▪ Introduction to Digital computer	
4.	▪ Digital computer structure and elements	
5.	▪ Design of digital systems	
6.	▪ Quiz 1	
7.	▪ Hardware design of digital computers	
8.	▪ Memory and Memory Organization	
9.	▪ Addressing Modes	
10.	▪ Floating point arithmetic	
11.	▪ Signed arithmetic operation	
12.	▪ Quiz 2	
13.	▪ Revision	

7. Course Learning & Teaching Methods

- Lecture 1: 2hrs (Thursday, 2:00pm)
- Formative phase tests and Group tutorials/discussions

8. Learning & Teaching Activities

Activity Type	Percentage	Hours
Lectures & Class Exercises	19%	20
Group Tutorials/Discussions	10%	10
Guided independent study	71%	75
Total	100%	105

9. Course Assessment Method

Requirement:	2 Hours Exam
Status:	Compulsory Course
Written Examination:	60%
Quiz/Test:	20% (Two Quizzes)
Homework:	10%
Attendance:	10%

Level of Performance	Grade	Rating (credit points per unit)
70-100%	A = Excellent	5.0
60-69%	B = Very Good	4.0
50-59%	C = Good	3.0
45-49%	D = Satisfactory	2.0
40-44%	E = Poor	1.0
0-39%	F = Failure	0.0

10. Industry Relevance

- Weather Forecasting
- Vehicle Tracking through GPS
- Robotics

11. Required Text

- Complete Digital Design,
by Marc Balch
McGraw Hill publisher

12. Recommended Texts

- An Introduction to Electronic Analogue Computers, 1st Edition
By C.A.A Wass
Pergamon Press Limited
- Fundamentals of Microprocessors and Microcomputers
by H.O Daley
Holt McDougal, 1983

13. Attendance Policy

Attendance is strictly mandatory. The University policy stipulates that in order to be eligible for a course examination, a student shall be expected to attend a minimum of 65% of the lecture, tutorials, practical and classes for the course in which he/she is registered [**Ref. Students' Handbook of Information, pg. 52**]. Any student, therefore, whose attendance rating falls below the required 65% shall not be eligible to write the course exam. In this regard, students will be notified of their eligibility status for a course examination prior to the exam.

14. Calculator Policy

Programmable calculators will not be allowed in the quizzes or final exam. The University policy prohibits the use of mobile phone, electronic programmable calculator, information storage devices, etc. in the quizzes or final exam [**Ref. Students' Handbook of Information, Pg. 49**]. A "programmable calculator" is one that can store program steps or text at any level of sophistication and the rule applies irrespective of whether or not there appears to be anything stored. If you are in any doubt as to the eligibility of your calculator, please see me well before the quiz/exam.

15. Exemption from Quizzes/Exam

Dated medical documentation is required for exemption from a quiz; in this case the weighting will be moved to the final. Makeup quizzes will not be offered under any circumstances. The University policy prohibits a student from absenting from exam except on acceptable medical grounds, and in consultation with the HOD and the Dean of the faculty. Any student absent on the ground of illness must produce a certified medical report, and students who absent from quizzes/exams for reasons other than illness, accident or some exceptional circumstances shall be deemed to have failed the course [**Ref. Students' Handbook of Information, Pg. 52**].

16. Ethical and Unethical Conduct

The preliminary purpose of Homework is to help students learn and gain practical experience in the subject matter. Allowing and encouraging collaborations with fellow students best serves this purpose. Modern engineering is, after all, almost exclusively a team effort. However, fairness requires us to be able to assess your *own* contribution. Therefore, the written material that you hand in *must* be your *ownwork*, and any discussions or collaborations with fellow students must be identified in writing on your solution (e.g. noting “the solution to problem #5 was worked out together with Mark Davison”, or “the solution to problem #2 was benefited from discussions with Ruth Peters”). Nearly identical solutions from different students who do not cross-reference each other will be viewed as statistically “unlikely”, thus worthy of further examination.

This policy is intended to help you make the most out of the course by allowing you to freely work with your classmates. If you are in any doubt as to what constitutes ethical or unethical conduct, please see any member of staff for assistance. Violations of this policy will be handled with maximum severity.