

Global Learning Semesters

Course Syllabus

Course: CENG-200 Digital Systems I

Department: Engineering

Host Institution: Intercollege, Nicosia, Cyprus



| Course Summary | | |
|----------------------|-------------------|--------------------------|
| Course Code | Course Title | Recommended Credit Hours |
| CENG-200 | Digital Systems I | 3 |
| Semester Offered | Contact Hours | Prerequisites |
| Fall, Spring, Summer | 42 | None |
| Department | Level of Course | Language of Instruction |
| Engineering | Lower Division | English |

Course Description

Introduction to the fundamentals of digital technology, the use of Boolean algebra in the analysis, design, and simplification of digital logic circuits, and the design of widely used digital components such as encoders, multiplexers, counters, etc. Specifically, the course covers the following topics: Digital concepts, pulse waveforms, binary number system, binary arithmetic, octal, hexadecimal, digital codes, parity, logic gates, Boolean algebra, logic rules and simplification, Karnaugh maps, SOP and POS minimization, logic circuit design, combinational logic circuits, comparators, encoders, decoders, code converters, multiplexers, demultiplexers, parity generators/checkers, half and full adders, parallel binary adders, flip-flops and their applications, programmable logic.

Instructor

Dr Anastasis Polycarpou

Course Aims and Objectives

To introduce students to the fundamental concepts of digital technology and the analysis and design techniques of digital and computer systems.

Teaching Methods

The course is delivered through a mixture of lectures and practical exercises and assignments.

Course Teaching Hours

42 hours (lectures/presentations). The course is delivered during the Fall and Spring semesters in 14-weeks (3 hours/week). During the Summer session the course is delivered in 7 weeks (6 hours/week).

Evaluation and Grading

Homework: 10%

Test 1: 25%
Test 2: 25%
Final Exam: 40%

Readings and Resources

Required Textbook

Thomas L. Floyd, Digital Fundamentals, Eighth Edition, Prentice Hall, 2003 (ISBN: 0-13-046411-2)

Recommended Reading

- Morris M. Mano, Charles R. Kime, Logic and Computer Design Fundamentals, Second Edition, Prentice Hall, 2000
- D. Gajski, Principles of Digital Design, Prentice Hall, 1997
- Garrod and Borns, Digital Logic Analysis, Application and Design, Saunders College Publ., 1991