



DIGITAL LOGIC DESIGN I

CS1026

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WELCOME!

Trinity College was founded in 1592, Ireland's oldest University

Catholics and Dissenters allowed entry in 1793 (professorships, fellowships and scholarships were reserved for Protestants until 1873)

From 1871 to 1970, Catholics were required to get permission from their bishop before taking up a place

Women first admitted in 1904

Top ranked university in Ireland

In 2017, there are approx.

- 17000 students College-wide
- 1000 in the School of Computer Science and Statistics
- 119 in CS1026

SUPPORT SERVICES

Library

- Largest in the country
- A “copyright library” for Ireland and the UK
- Excellent online resources
- Library HITS

Student Learning Development

- Academic skills

Student Life

- Visit the Book of Kells
- Join one of the 170 college societies and sports clubs
- Support your Student Representative
- Attend talks/lectures

YOUR RESPONSIBILITIES

Attend lectures

Come prepared for class

Engage

- Ask questions
- Participate in labs
- Share information

Submit assignments on time

Meet the assignment criteria

Study outside of lectures



HOUSE RULES

No bad language

No electronic devices

No disruptive behaviour

COURSE STRUCTURE

Two 1 hour lectures every week

- Monday, 1pm in LB04
- Thursday, 11pm in LB04

Lectures cover the course material

Slides will be made available on Blackboard in advance of the lecture

One 2 hour lab session every 3 weeks

- Thursday, 2-6pm in LG35/LG36
- Class will be divided into 6 groups and scheduled accordingly, details will be posted on Blackboard

Gain experience of physical reality underlying the theory of digital logic

ASSESSMENT

80% End of Year Examination

- Previous exam papers available online

20% Coursework

- Reports of Lab Sessions
- Written in a hardback Lab Book
- Marked continuously throughout the semester
- Submitted at end of semester for final marking

40% overall mark required to Pass

- Includes satisfactory coursework and attendance

In the Supplemental Examinations, assessment is by written examination only, which contributes 100% of the overall mark



TEXT BOOK

Digital Design, 5th Edition

- M. Morris Mano, Michael D. Ciletti
- Prentice Hall
- ISBN-10: 0132774208
- ISBN-13: 978-0132774208

LEARNING OUTCOMES

State and apply the laws and standard methods of Boolean algebra to the manipulation of logic functions

Analyze and design combinatorial logic functions

Implement digital logic designs in hardware

Conduct and describe experiments to verify the correct behaviour of a digital logic circuit and, where necessary, locate and correct faults

Synchronous / Asynchronous logic

Flip Flops and Storage Elements

Algorithmic State Machines

Introduction to Advanced Digital Logic topics

WHAT IS DIGITAL LOGIC DESIGN?

Digital: (of signals or data) expressed as series of the digits 0 and 1, typically represented by values of a physical quantity such as voltage or magnetic polarization

Logic: a system or set of principles underlying the arrangements of elements in a computer or electronic device so as to perform a specified task

Design: a plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is made

Ref: Oxford Dictionaries