CSE 260: Digital Logic Design

General Information:

Course ID: CSE260
Section: 07 and 08
Semester: Summer2018
Course pre-requisite: Null
Course credits: 3

Instructor Information:

Name and title: Walid Mohammad (WAM)
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Consultation room location/number: UB50411

Course overview:

To provide introduction to digital systems such as computers, communication and information systems. Topics covered include Boolean Algebra, Digital Logic Gates, Combinational Logic Circuits, Decoders, Encoders, Multiplexers, Asynchronous and Synchronous Counters, Registers, Flip-Flops, Adders, Sequential circuit analysis and design, Simple Computer Architecture and much more.

Learning outcomes:

By the end of this course, students will be able to:

Convert different number systems.
Design and analyze basic Circuit.
Examine the theoretical concepts of digital logic design.
Practical implementation of what has been taught in class.

Teaching-learning methodology:

Interactive discussion.
Recitation and oral questions by teacher answered orally by students.
Problem solving.

Required course materials:

Suggested Book:
Digital and Computer Logic Design by Morris Mano
The E-Book is provided in the TSR

Lecture Slides:
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Course content:

All Chapters of the book

Tentative course schedule:

Week-1		
(12-May to 17-May)	Class-1	Number base conversions [Lecture 1]
	Class-2	Arithmetic operations in n-Base number systems [Lecture 1]

Week-2		
(19-May to 24-May)	Class-3	BCD, Excess-3 Codes, 1's and 2's complement [Lecture 2]
	Class-4	Introduction to Boolean Logic, Basic Gates, Truth Tables, Universal Gates [Lecture 3]

Week-3		
(26-May to 31-May)	Class-5	Boolean Algebra, Duality [Lecture 3]
	Class-6	SOP, POS [Lecture 4_and_5]

Week-4		
(2-June to 7-June)	Class-7	Karnaugh Map [Lecture 4_and_5]
	Class-8	Karnaugh Map [Lecture 4_and_5]

Week-5		
(9-June to 14-June)	Class-9	Tabulation Method [Lecture 6]
	Class-10	Tabulation Method [Lecture 6]

Week-6**		
(16-June to 21-June) **Eid Week	Class-11	Half Adder, Full Adder, Parallel Adder [Lecture 7]
	Class-12	Propagation Delay, Problem Solving [Lecture 7]

Week-7**		
(23-June to 28-June) **Mid Week	Class-13	Comparators [Lecture 8]
	Class-14	Comparators [Lecture 8]

Week-8		
(30-June to 5-July)	Class-15	Decoder, Encoder [Lecture 9]
	Class-16	MUX, DeMUX [Lecture 9]

Week-9		
(7 July-12 July)	Class-17	MSI Circuit Related Problems [Lecture 9]
	Class-18	Introduction to Sequential Circuits, Basics of Flip-flops [Lecture 10]

| Week-10 | Class-19 | Sequential Circuit Analysis and Design [Lecture 10,11] |
| (14 July-19 July) | Class-20 | Sequential Circuit Analysis and Design [Lecture 11] |

Week-11		
(21 July-26 July)	Class-21	Counters, Asynchronous vs Synchronous [Lecture 11]
	Class-22	Registers and Memory [Lecture 12]

Week-12		
(28 July-1 August)	Class-23	Recap and Discussion
	Class-24	Recap and Discussion

Evaluation:

Attendance : 5%
Assignment (Individual problem solving) : 5%
Class Tests/ Quizzes (Theory+ MCQ+ Problem solving) : 10%
Lab : 20%
Project: 5%
Mid Term Exam (Theory +Problem solving) : 20%
Final Exam (Theory+ Problem solving) : 35%

General policy:

Grading criteria:
The grades at the University will be indicated in the following manner:
90 - 100 = A (4.0) Excellent
85 - <90 = A- (3.7)
80 - <85 = B+ (3.3)
75 - <80 = B (3.0) Good
70 - <75 = B- (2.7)
65 - <70 = C+ (2.3)
60 - <65 = C (2.0) Fair
57 - <60 = C- (1.7)
55 - <57 = D+ (1.3)
52 - <55 = D (1.0) Poor
50 - <52 = D- (0.7)
<50 = F (0.0) Failure

Grades without numerical value:

P: Pass
A course may be taken for a pass/fail grade providing that the instructor approves the option and the student carries 12 credits for regular letter grades in that semester.

I: Incomplete
Incomplete is assigned only when a student has failed to complete one or more requirements of the course for an unavoidable reason/accidental circumstance and has applied for I grade.

W: Withdrawal
Withdrawal is assigned to a student who withdraws from the course within the deadline for withdrawal with 'W' grade.

Attendance policy:

Attendance and punctuality are equally important as participation in class. Late comers are considered absent. Students are given no permission to be absent for any reasons other than sickness or illness of some kind. However, students are required to prove that they were sick or ill to be given consideration for their absence. If a student fails to maintain 70% attendance, s/he will be barred from the course. However, in case of illness (keeping in accordance with BRACU policy), exceptions can be made.

Latecomer policy:

In case of late submission, grading rules adopted and followed in the department will be applicable to this course. Cause of late submission or absence has to be well supported by appropriate documents.

Gender policy:

Gender equity among male and female students in class will be maintained as per the BRAC University concern and BRAC's consistent endeavors on women empowerment. Therefore, all students will be evaluated equally based on their performance in the course concerned regardless of their gender.

Inclusive education policy statement:

Each of the students shall be given equal access to laboratory resources, relevant materials and consultation hours, free from discrimination based on gender, language, sexual orientation, pregnancy, culture, ethnicity, religion, health or disability, socioeconomic background or geographic location, as per the inclusive education policy of Bangladesh