Lesson plan

for

CSE 1211: Introduction to Digital Electronics
CSE 1212: Introduction to Digital Electronics LAB

1st year, Even Semester 2021

Course Instructor:
Dr. Md. Rokanujjaman
Professor
Dept of CSE
University of Rajshahi
Email: mrjaman@ru.ac.bd
Phone: 01712043386

Office: 4th Science building, Room No. 117
Lectures:
Sunday 9:20 am~ 10:20 am
Monday 9:20 am~ 10:20 am
Thursday 9:20 am~ 10:20 am
Classroom: 4th Science building, Room No. 313
Laboratory Works: Room No. 315
Thursday 10:25 am~ 12:30 pm

Topics included:
Logic Gates and Boolean Algebra, Number Systems, Switching Devices, Flip-Flops (FFs), 555 Time, and A/D And D/A Converters.

Course materials:

1. Text books:

i) Digital Systems: Principles and Applications, Ronald J. Tocci

2. Reference books:

i) An Introduction to Switching Theory and Digital Electronics, V. K. Jain

Course outcome: After completing the course the students

- will be able to understand both the fundamentals and also the design, implementation and application principles of digital electronics, devices and integrated circuits
- will also achieve a basic understanding of number systems and representations, different type of codes, logic gates and Boolean algebra, DTL, TTL and CMOS integrated circuits, basic combinational and sequential logic design, timer and A/D-D/A converters

Prerequisite: Fundamental knowledge of Basic Electronics and Introduction to Computer Systems

Grading policy:
Individual component of the class will be weighted as follows
Class attendance: 10%
Class test/ Assignment/ Continuous Assessment: 20%
Final Exam: 70%

Grading will be done on a straight mark basis.

Exams:

There will be three class test (CT) and a final exam in the course. No electronic device other than a calculator will be allowed during the exam (including phones, PDAs, MP3/CD players). The tentative dates of the exam are given below:

1st CT--- 02/09/2022
2nd CT---06/11/2022
3rdCT --- 01/12/202
Final Exam--- Date will be announced by the Faculty of Engineering

Assignment:

Assignments will be given periodically. The assignments are to be worked individually. Any work directly copied from the internet, other students, textbook etc. will result an automatic zero for the assignment. All late submission will have points deducted from them. Assignment must be returned as hand-written report. A week after the due date the assignments will no longer be accepted.

Tentative class schedule:

1st week:	Fundamentals of Digital Logic System and Number systems
2nd week:	Logic gates and Boolean algebra
3rd week:	Logic gates and Boolean algebra: Minimization Techniques
4th week:	Logic gates and Boolean algebra: Minimization Techniques
5th week:	Switching Devices
6th week:	Flip-Flops (FFs) and related devices
7th week:	Flip-Flops (FFs) and related devices
8th week:	555 Timer
9th week:	A/D And D/A Converters
10th week:	A/D And D/A Converters and Course reviews and discussion on question pattern for final examination
11th week:	Presentation on at least one assignment

CSE 1212: Introduction to Digital Electronics LAB

Tentative LAB schedule:	**LAB Programs**
1st week:	To study and verify the truth table of logic gates To Implementation of different logic function
2nd week:	
3rd week:	To realize half/full adder and half/full subtractor. i. Using X-OR and basic gates ii. Using only NAND gates.
4th week:	To verify BCD to excess –3 code conversion using NAND gates. To study and verify the truth table of excess-3 to BCD code converter. (Vice versa)
5th week:	To convert given binary numbers to gray codes. (Vice versa) To implement Parity generator and checker
6th week:	Truth table verification of Flip-Flops: i. SR ii. JK iii. D- Type iv. T- Type.
7th week:	Design and testing of Bistable, Monostable and Astable multivibrators using 555 timer.
8th week:	
9th week:	Design and testing A/D and D/A converters
10th week:	
11th week:	Design and test DTL and TTL logic gates