Department of Computer Science and Engineering
Khulna University of Engineering & Technology
Khulna - 9203, Bangladesh

Course Plan/Profile

1. **Course No.: CSE 1201** **Contact Hours:3/week**
2. **Course Title: Structured Programming Language**
3. **Course Teacher: Md. Shamimur Rahman, Abdul Aziz**
4. **Learning Outcome:**

   Students completing the course should know:

   - Understand Structured Programming syntax.
   - Convert a problem statement into the logic/code for a computer program.
   - Write efficient and well-documented modular programs.
   - Understand the use of elementary data structures including arrays, strings, and classes.
   - Test a program for correctness (no logic errors)
   - Debug (get rid of syntax and run-time errors) a computer program.

5. **Schedule:**

Class	Topics to be Discussed
1	Structured Programming Languages
2	History of C
3	Basic Structure of C
4	Type of expressions, control structures
5	Data types
6	Variable declaration, keywords.
7	Memory Allocation, garbage collection
8	Type casting and conversion
9	Standard input and output, Using comments in a program
10	Format specifier
11	Different types Operators
12	Different types Operators
13	Conditional Statement,
14	If, else
15	Else if ladder, nested if else
16	Switch case, break.
17	Switch case, break.
18	Loop control structure, for loop

19	While loop
20	Do while loop, continue.
21	Function: Function basic
22	Prototyping, Parameter
23	Create function that returns value
24	Recursion
25	Array
26	Array
27	Array
28	String
29	String
30	String
31	Structure
32	Structure
33	Structure
34	Pointer
35	Pointer
36	File
37	File
38	Introduction to Graphics routines
39	Compiling; Makefile; debugging

1. **Date of class tests:** 26.09.18, 24.10.18, 14.11.18 **(Tentative)**

Detailed Course Plan for CSE 1202: Structured Programming Lab

Academic Session 2017-2018

Quality Assurance Cell
Department of Computer Science and Engineering
Khulna University of Engineering & Technology
Khulna-9203

Lab no.	Topics
01.	Memory Allocation, Type casting and conversion, Input from keyboard, Using comments in a program, Format specifier.
02.	Different types Operators
03.	Conditional Statement, if, else, else if ladder, nested if else, switch case, break.
04.	Loop control structure, for loop, while loop, do while loop, continue.
05.	Array.
06.	Lsb Test.
07.	String.
08.	Array.
09.	Function: Function basic. Prototyping. Parameter. Create function that returns value Recursion.
10.	Structure.
11.	Pointer.
12.	File.
13.	Lab Test + Quiz

References:

1. **Let Us C -** Yashwant Kanetkar.
2. **Programming in ANSI C –** E Balagurusamy.
3. **Teach Yourself C -** Herbert Schildt.

Signature of Course Teachers

1.

2.

Signature of the

Head of the Dept.

Department of Computer Science and Engineering
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Course Plan/Profile

CSE 1203 (Digital Logic Design) **Credit: 3.0**

1. **Course Teacher:** Md. Milon Islam and Mahmudul Hasan
2. **Learning Outcome:** The followings are the learning objective of the course:
   - ✓ Describe the concept of different number systems and their corresponding Codes.
   - ✓ Define the different types of logic gates and logic functions.
   - ✓ Explain the concept of Boolean functions, Boolean algebra and corresponding Combinational Circuits and simplify logic expressions using Boolean algebra, Karnaugh maps and Tabular methods.
   - ✓ Discuss different types of prefabricated integrated circuits and logic families.
   - ✓ Describe basic knowledge and understanding of fundamental principles of computer architectures how these support Hardware/Software-based applications.
   - ✓ Describe the concept of different number systems and their corresponding Codes.
   - ✓ Explain the concept of sequential logic circuits and analyze and design simple sequential circuits.
   - ✓ Define different types of flip-flops and latches, counters, registers.
   - ✓ Identify different types of computer memories and their arrangements.
   - ✓ Discuss different types of prefabricated integrated circuits and logic families.
   - ✓ Use SSI, LSI and MSI circuits to design logic circuits and programmable devices (ROM, PAL, PLA ...) to design simple logic circuits.
3. **Schedule:**

Sl.	Topics
1.	Different types of logic gates
2.	Boolean algebra and switching theory
3.	Boolean functions
4.	Canonical forms
5.	Minimization of Boolean functions
6.	Minimization of Boolean functions
7.	Karnaugh maps
8.	Combinational Circuit Design Issues
9.	Adder
10.	Subtractors
11.	Decoders
12.	Encoders
13.	Arithmetic and data handling logic circuits
14.	Multiplexers
15.	Demultiplexers

16.	Binary Parallel Adder
17.	Digital display
18.	Fan-in, Fan-out, propagation delay, power dissipation
19.	Hazards in combinational circuit.
20.	Digital systems and Codes
21.	Code Conversion
22.	ROM and EPROM
23.	PLA and PAL design
24.	Flip flops
25.	Flip flops
26.	State diagram and timing diagrams
27.	Sequential circuit analysis
28.	Mealy and Moor machines
29.	State minimization and assignments
30.	Design of Counters
31.	Design of Counters
32.	Register
33.	The Memory Unit
34.	Asynchronous counters and synchronous counters and their applications
35.	Synchronous and asynchronous logic circuit design
36.	Combinational Logic with MSI and LSI
37.	Race around problems
38.	Races in sequential circuits
39.	**Class Test**

CSE 1204 (Digital Logic Design Laboratory) **Credit: 3.0**

1. **Course Teacher:** Md. Milon Islam and Mahmudul Hasan
2. **Learning Outcome:** The followings are the learning objective of the course:
   - ✓ To introduce with different types of logic gates and logic functions.
   - ✓ Explain the concept of Boolean functions, Boolean algebra
   - ✓ To simplify logic expressions using Boolean algebra, Karnaugh maps.
   - ✓ Describe the concept of different number systems and their corresponding Codes.
   - ✓ Explain the concept of sequential logic circuits and analyze and design simple sequential circuits.
   - ✓ Implement different types of combinational circuits

3. **Schedule:**

Sl.	Topics
1	Familiarization with Basic Gates AND(7408), OR(7432) NOT(7404) and X-OR(7486)
2	Study of Universal Gate NAND(7403) and formation of Basic gates AND, OR, NOT and another gate X-OR
3	Designing a full adder circuit Using X-OR(7486), AND(7408) and OR(7432) gate
4	An Experiment on BCD to Excess-3 code converters
5	An Experiment on Parallel Binary Adder
6	An Experiment on Conversion of BCD to 8 4 -2 -1
7	An Experiment on Code Conversion (BCD to 2 4 2 1)
8	An Experiment on Code Conversion (Binary to Square)
9	An Experiment on 2's Complement
10	An Experiment on seven segment Display
11	Design a 4 bit binary counter using (SR/JK/T/D) Flip Flop for display Roll number on Breadboard
12	Design a Decoder in logisim
13	**Lab Test and Quiz test**

Course ID: **EEE 1217**	Course Title: **Analog Electronics**	**Contact Hours per week: 3**	**Credit:**3 .00	Course Teacher: **Dr. Md. Selim Hossain**

Course Content:

Course Teacher: Monira Islam

Introduction to Semiconductors: p-n Junction diode characteristics, Diode applications: half and full wave rectifiers.

Bipolar Junction Transistor: Operation principles, Characteristics, Small signal low frequency h-parameter model, Hybrid pie model, Amplifiers, Switches, Darlington pairs.

Field-Effect Transistor (FET): Introduction to different FETs such as JFET, MOSFET, NMOS, PMOS and CMOS, Biasing and applications.

Course Teacher: Dr. Md. Selim Hossain

Operational Amplifiers: Gain, Input and output impedances, Offset null adjustment, Frequency response and noise, Introduction to Oscillators, Rectifiers, Active filters, Regulated power supply, Stabilizer and UPS, Basic ideas about IC fabrication techniques, Linear and Nonlinear applications of Op-amps.

Power Semiconductor Devices: SCR, TRIAC, DIAC, UJT and their applications.

Rationale:

This unit is one of the important courses for the undergraduate students to provide the knowledge on how to design different analog electronic circuits, e.g. DC power supply, amplifier circuit from the concepts of various electronics knowledge and theory.

Course Objectives: The main objectives of this course are;

- The main aims to address the application of fundamental principles and knowledge about various semiconductor materials, electronic devices and their application in our real life.
- To introduce different power electronics devices, such as SCR, TRIAC, DIAC and UJT, and how to use in the power control circuits and their other practical applications.
- To develop specialized knowledge and skills on how to design modern analog electronic circuits.

Intended Learning Outcome: After completion of this course students should be able to

- Acquire better skill in the use of electronic devices.
- Explain the construction, principle of operation and application of various electronic devices and circuits.
- Describe various analog electronic circuit design methodology in different ways.
- Ability to use different electronics components to a variety of practical electronic devices to establish the theory.
- Ability to use basic circuit building blocks to create advanced analog electronic circuits.

Class Schedule:

SL No.	Week	Class No.	Topics To be discussed	References
1	2	01	Electronics basic, SCR basic, Construction of SCR, Working of SCR.	01. Principles of Electronics by V. K. Mehta 02. Electronics Devices and Circuit Theory By R. L. Boylestad and Lecture through different online sources
2	3	02	SCR principle of operation using equivalent circuit model, Some Important Terms on SCR, Characteristic curve of SCR	
3	4	03	SCR Normal Operation, as a switch, SCR half and full wave rectifiers, Applications of SCR	
4	5	04	TRIAC basic, construction, Principle of operation, Characteristics, Applications of TRIAC	
5	6	05	DIAC basic, construction, Working Principle, Characteristics, Applications of DIAC, such as DIAC as a lamp dimmer and heat control	
6	7	06	UJT basics, Equivalent Circuit, Construction, Principle of Operation	
7	8	07	UJT as relaxation Oscillator, some other applications, Some math problem based on UJT theory	
8	9	08, 09	Different types of filter design, such as Capacitor filter, pie filter, RC filter for regulated DC power supply, practical DC power Supply design, Stabilizer and different types of UPS, such as offline, online and standby UPS	Online sources/articles which will be given to student and ref 01 and 02
9	10	10, 11	Op-amp properties, different parameters of an op-amp, gain, I/O, CMRR, OP-amp basics,	Reference 02
10	11	12, 13	Op-amp as summing amplifier, subtractor, differentiator and integrator, Op-amp slew rate and some mathematical problem on op-amp. Different types of active filter design.	Reference 02
11	12	14, 15	Oscillator basic, sinusoidal Oscillators, damped, undammed oscillator, different types of the oscillator circuit and their applications, some mathematical problems.	Reference 01
12	13	16, 17	IC fabrication basic, Advantages and Disadvantages of ICs, various IC fabrication techniques, IC packaging and some important terms on IC	Reference 01

Teaching Methodology/Strategy:

- Lecture Through White board
- Power point presentation
- Question-answers in the class
- Different Assignments
- Spot Test in the class
- Handouts

Evolution Statics: Evaluation Strategy:

- Attendance & Performance
- Assignment
- Class Test
- SPOT test during class
- Final exam.

Class Starting Date: 28/08/2018
Class Test Date: Week 7 and Week 12

Consulting Hour (Day and Time): Every Tuesday 3pm- 5pm

Course Teacher:

Dr. Md Selim Hossain,
Assistant Professor,
Department of EEE,
Room No.: EEE 305,
KUET, Khulna 9203
Email: selim@eee.kuet.ac.bd
Website: http://www.kuet.ac.bd/eee/selim/

Course no. ME 1270

Course title: Drawing and CAD Project

Course Learning Outcomes

By the end of this course, the students should be able to
CLO 1: Explain the orthographic and isometric drawing
CLO 2: Draw the orthographic and isometric drawing
CLO 3: Draw the 2D and 3D geometry using AutoCAD

Course Plan:

Week	Topics
1	Introduction
2-4	Orthographic Projection
5-6	Isometric Projection
6-9	2D drawing using AutoCAD
10-11	3D drawing using AutoCAD
12	Final Drawing (Paper and AutoCAD)

Course Teacher: 1. Prof. Dr. Mohammad Ariful Islam

2. Mr. Md. Mahbubur Rahman