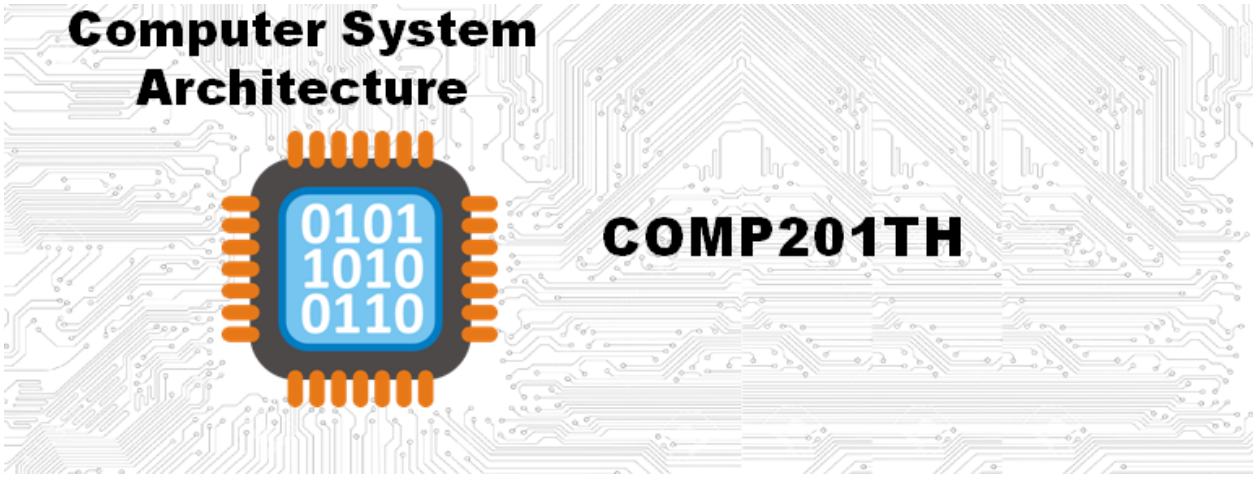

"If people do not believe that mathematics is simple, it is only because they do not realize how complicated life is." ***--John von Neumann***

In this course, we will learn how hardware and software technologies interact to create a computer platform or system.

Course Outcomes:

- ***Students will have a comprehensive understanding of digital logic, computer organization, and programming concepts.***
- ***Students will develop skills in circuit design, data representation, instruction set architecture, CPU organization and input-output operations.***
- ***These concepts and skills will provide a strong foundation for further studies and careers in computer science and related fields.***

Course Material:
All the course material will be available on Canvas.

In the beginning of the course, all the students will receive an invite on their respective e-mail IDs for joining the course.
I will use e-mail Ids that you have filled in your Admission forms. If some of you will be using any alternate e-mail ID then do update me.

Link to Course Material: Will update as the session starts
All the assignments, quizzes and tests will be maintained online on Canvas only.
Communication via email is preferable. So, do email me for any queries or information regarding joining the course.

For queries related to course material, the in-built messaging system of canvas is recommended.

Course Schedule

Total Lectures: 40

Class Time: as per time-table approved by the College.

Room No: 129 (1st Floor, Old Building Govt. College Hamirpur)

All the practical classes will be conducted in the Department of Computer Science Lab (Room No: 128) on 1st floor of old building of Govt. College Hamirpur.

The schedule of lectures will be in accordance with the approved academic calendar of the college.

Lecture	
	Introduction
Lecture: 1	Logic Gates
Lecture: 2	Boolean Algebra
Lecture: 3	Canonical Normal Forms
	Epilogue (Lecture-3)
Lecture: 4	K-Maps
Lecture: 5	K-Map Example & Don't Care Conditions
Lecture: 6	Prime Implicants
Lecture: 7	Combinational Circuits (Half & Full Adder)
Lecture: 8	Multiplexer

Lecture: 9	Decoders
Lecture: 10	Sequential Circuits
Lecture: 11	Latches
Lecture: 12	SR and JK Flip Flop
Lecture: 13	D & T Flip Flop and Master Slave Flip Flop
Lecture: 14	Registers
Lecture: 15	Counters
Lecture: 16	Memory Unit
Lecture: 17	Number System
Lecture: 18	Complements
Lecture: 19	Fixed and Floating Point Representation
Lecture: 20	Character Representation
Lecture: 21	Addition and Subtraction
	Unit Test-1
Lecture: 22	Common Registers and Bus System
Lecture: 23	Instruction Set
Lecture: 24	Timing and Control, Instruction Cycle
Lecture: 25	General Register Organization

Lecture: 26	Arithmetic Microoperations
Lecture: 27	Logic Microoperations
Lecture: 28	Stack Organization
Lecture: 29	Microprogrammed Control

Unit Test-2

Lecture: 30	Instruction Formats
Lecture: 31	Addressing Modes
Lecture: 32	Instruction Code and Machine Language
Lecture: 33	Assembly Language
Lecture: 34	Input Output Programming

Unit Test-3

Lecture: 35	Peripheral Devices
Lecture: 36	Input Output Interface
Lecture: 37	Modes of Data Transfer
Lecture: 38	Priority Interrupt
Lecture: 39	Direct Memory Access
Lecture: 40	DMA Controller and DMA Transfer

Unit Test- 4