Course Title	**COMPUTER & NETWORK ARCHITECTURE**
Course Code	**CSN 123**
Course Purpose and Objectives	The course introduces basic principles of computer architecture, such as Central Processing Unit, Memory, Input / Output organization and computer software at low level. In addition, the course presents data communication systems, communication techniques, networks architectures and network security. Current and contemporary issues are also discussed. The course introduces to students the way that hardware components are connected together to form a computer system. The structure, behaviour and interaction of various computer modules are also presented. Also, the course provides an overview of the broad and constantly emerging field of data communications and computer networks. Data communication is discussed as the necessary tool for understanding computer communication networks.
Learning Outcomes	1. Describe the hardware units found in a typical CPU and its overall operations. 2. Illustrate how different design methodologies affect the CPU performance. 3. Explain the basic IO operation and memory management issues. 4. State and identify concepts relating to data communications; communication protocols and layered protocol architectures. 5. Explain and discuss data link control protocols and their functionality.
Course Content	• Transfer of data from memory and I/O to registers and transfer of data from register to register. • Basic Computer Organization and Design. Instruction Codes,. • Computer software. Assembly language and the assembler. Instruction sets. • Central Processing Unit organization. • Control Unit operations. • Computer Arithmetic. • Input-Output organization. External devices. • View of computer's memory organization. • Communication systems, entities and components. • Data communication systems; transmission, impairments and media • Communication techniques • Local area networks; wired and wireless LAN topologies, protocols and the IEEE 802 standards. • Network security Requirements. • Recent developments and contemporary issues.