

Department of Computer Applications

Specific Outcome of course [Computer Application]:

- focuses on preparing student for roles pertaining to computer applications and IT industry
- start from the basics and in every semester learns each and everything about computers. [Computer languages , Packages , Application Software's, etc]
- develop programming skills, networking skills, learn applications, packages, programming languages and modern techniques of Information Technology.
- get skill and info not only about computer and information technology but also in common, organization and management
- Learn programming language such as C , C++ , Java, Visual Basic , SQL, Oracle , HTML, ASP.NET, JavaScript, VBScript , Python, etc
- Information about various computer applications and latest development in IT and communication system is also provided
- to tackle various information security techniques to safe guard the valuable information from one end to another
- overview of the topics in IT like networking, computer graphics, web development, trouble shooting, and hardware and software skills, software testing , multi media , Animation development, Artificial Intelligence, Data mining , etc..
- Bachelor in computer applications (BCA) gives a number of opportunities to individuals to go ahead and shine in their lives.
- A few of them being like software programmer, system and network administrator, web designer Test Engineer , UI developer , HR Assistant , faculty for computer science and computer applications

Subject wise outcomes

Java :

- Java is object oriented programming

- Java was designed to be easy to use and easy to write.
- It is used to Compile, Debug and learn then other programming language.
- Java is memory consuming and significantly slower than native language such as, C or C++
- It is also slow compare to other language like C and C++ because each code as to interpreted to the machine level code
- It permits you to form standard programs and reusable code
- Java is platform independent
- Java is a Secured Language
- Java provides automatic garbage collection

Applications of Java :

- Java mobile Application
- Java Desktop GUI Application
- Java Web- Based Application
- Java Gaming Application
- Java Big data Technologies

Computer Architecture and organization :

- Computer as making human life faster because of its incredible speed Accuracy and storage, with which human can save anything and search it out easies when needed.
- On Systems without a memory management unit, its offers a level of protection since you can't start to execute data as code.
- Computer architecture deals with design of computers, data storage devices and networking components that store and run programs, transmit data and drive inter actions between computer across network and with users
- It allows for different media for instruction and data
- The data flow, timing analysis memory hierarchy, trade-offs between execution cycles, hardware requirements / costs, software – hardware trade – off can be known.
- Computer Organization and Architecture is the study of internal working, structuring and implementation of a computer system.
- Architecture in computer system, same as anywhere else, refers to the externally visual attributes of the system.

- Computer Architecture helps us to understand the functionalities of a system.
- Computer Organization tells us how exactly all the units in the system are arranged and interconnected
- . A programmer can view architecture in terms of instructions, addressing modes and registers

Application of computer Architecture and organization :

- 1. Von Neumann Architecture 2. The Fetch-Decode-Execute- Reset Cycle 3. The need for and the use of buses to convey data. 4. Parallel processing.
- This describes design architecture for electronic digital computers with subdivisions of a central arithmetic part, a central control part, a memory to store both data and instructions, external storage, and input and output mechanisms.
- A stored-program digital computer is one that keeps its programmed instructions, as well as its data, in read-write, random-access memory (RAM).
- The Von Neumann architecture uses a single processor which follows a linear sequence of fetch-decode- execute.
- Register Meaning PC Program Counter CIR Current Instruction Register MAR Memory Address Register MDR Memory Data Register IR Index Register
- The need for and the use of buses to convey data.
 - (DATA BUS - ADDRESS BUS - CONTROL BUS)

Data commination and network :

- Term “Data Communication” comprises two words: Data and Communication. Data can be any text, image, audio, video, and multimedia files.
- Communication is an act of sending or receiving data. Thus, data communication refers to the exchange of data between two or more networked or connected devices.
- Data communications refers to the transmission of this digital data between two or more computers and a computer network or data network is a telecommunications network that allows computers to exchange data.

- For data communications to occur, the communicating devices must be part of a communication system made up of a combination of hardware (physical equipment) and software (programs).
- The effectiveness of a data communications system depends on four fundamental characteristics: delivery, accuracy, timeliness, and jitter.
- Data communications refers to the transmission of this digital data between two or more computers and a computer network or data network is a telecommunications network that allows computers to exchange data.
- The physical connection between networked computing devices is established using either cable media or wireless media. The best-known computer network is the Internet.
- Data Communication and Computer Network (DCN) and will also take you through various advance concepts related to Data Communication and Computer Network.
- A system of interconnected computers and computerized peripherals such as printers is called computer network.
- This interconnection among computers facilitates information sharing among them. Computers may connect to each other by either wired or wireless media.
- Application of data communication network
- Exchange of information by means of e-Mails and FTP.
- Information sharing by using Web or Internet. Interaction with other users using dynamic web pages. IP phones.
- Computer networks support an enormous number of applications and services such as access to the World Wide Web, digital video, digital audio, shared use of application and storage servers, printers, and fax machines, and use of email and instant messaging applications as well as many others.
- The applications such as telnet, DHCP, FTP, SNMP are all networked applications that are very closely tied to the protocols they are using.
- A web browser, which is also a web application allows you to type a URL in the address box and takes you to the destination page using HTTP or HTTPS protocols.

Microprocessor :

- The microprocessor is the central unit of a computer system that performs arithmetic and logic operations, which generally include adding, subtracting, transferring numbers from one area to another, and comparing two numbers.
- It's often known simply as a processor, a central processing unit, or as a logic chip.
- It's essentially the engine or the brain of the computer that goes into motion when the computer is switched on. It's a programmable, multipurpose device that incorporates the functions of a CPU (central processing unit) on a single IC (integrated circuit).
- A microprocessor is a basic computer-based processor that incorporates the function of a central processing unit on a single integrated circuit, or at most a few integrated circuits.
- The microprocessor is that these are general purpose electronics processing devices which can be programmed to execute a number of tasks.
- It is portable, Compact size, High speed, Low power consumption,
- It is very reliable and less heat generation.
- The microprocessor is very versatile.
- The microprocessor is its speed, which is measured in basically Hertz. For instance, a microprocessor with a measured speed 3 GHz, shortly GHz is capable of performing 3 billion tasks per second
- The microprocessor is that it can quickly move data between the various memory location

Application of microprocessor :

- The microprocessor is used in personal computers (PCs).
- The microprocessors are used in modems, telephone, digital telephone sets, and also in air reservation systems and railway reservation systems.
- It is also used in mobile phones and television.
- It is used in calculators and game machine.
- It is used in accounting system and data acquisition system.

- It is used in military applications.
- It is also used in traffic light control.

C++ :

- C++ is an object-oriented programming language and includes concepts like classes, inheritance, polymorphism, data abstraction, and encapsulation which allow code reusability and makes programs very maintainable.
- C++ use multi-paradigm programming. The Paradigm means the style of programming.
- C++ is a highly portable language and is often the language of selection for multi-device, multi-platform app development.
- C++ is an object-oriented programming language and includes concepts like classes, inheritance, polymorphism, data abstraction, and encapsulation which allow code reusability and makes programs very maintainable.
- C++ use multi-paradigm programming. The Paradigm means the style of programming .paradigm concerned about logics, structure, and procedure of the program. C++ is multi-paradigm means it follows three paradigms Generic, Imperative, Object Oriented.
- It is useful for the low-level programming language and very efficient for general purpose.
- C++ gives the user complete control over memory management. This can be seen both as an advantage and a disadvantage as this increases the responsibility of the user to manage memory rather than it being managed by the Garbage collector.
- The wide range of applications – From GUI applications to 3D graphics for games to real-time mathematical simulations, C++ is everywhere.
- C++ has a huge community around it. Community size is important, because the larger a programming language community is, the more support you would be likely to get. C++ is the 6th most used and followed tag on Stack Overflow and GitHub.
- C++ has a very big job market as it is used in various industries like finance, app development, game development, Virtual reality, etc.

Application of C++ :

- Operating Systems. Be it Microsoft Windows or Mac OSX or Linux - all of them are programmed in C++.
- Browsers, Libraries, Graphics, Cloud/Distributed Systems, Embedded Systems, and Banking Applications.
- Adobe Photoshop & Illustrator. Photoshop is one of the most popular and advanced graphics editors.
- One of the most popular audio streaming apps has a back-end written in C++
- Google open source community has over 2,000 projects and many of them use C or C++ as their main Programming languages. These include WebRTC, GRPC and DeepMind Lab, which freely available as open source at GitHub.