



# BISMARCK

TECHNOLOGY & LEARNING INSTITUTION LIMITED

Every Life, Every Moment, Every Day. A New Discovery...

## IT TECHNOLOGIES COURSES (SECTION 4)

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# BISMARCK

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Every Life, Every Moment, Every Day. A New Discovery...

**IMAGE EDITING PROFESSIONAL COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Image Editing?*

**Image Editing** is the modification or improvement on digital or traditional photographic images using various techniques, tools and softwares.

**Image Editing** is done to bring out the best possible look and to beautify images and improve the overall quality of an image using various editing techniques and parameters.

**An Image Editor** is a software program used to edit or otherwise manipulate/beautify an image, picture or graphic. Image Editors are alternatively referred to as photo softwares or graphics softwares. There are many software beautifiers, one of the most popular and powerful image editors and beautifiers is Adobe Photoshop, others are Adobe Light Room, Corel Paint Shop, GIMP among others.

**People using Microsoft Windows** can also make use of the pre-installed MS-Paint program as a basic image editor.

### **Other types of painting software for windows include:**

Microsoft Paint

Adobe Photoshop CC

Autodesk Sketchbook

Corel Paint

Paint.net

Microsoft Paint 3D

Krita

Artweaver Free

Microsoft Fresh Paint

MyPaint

Zen: Coloring Book For Adults

Sketchable etc.



## *Features Of Image Editing*

**Computer or camera image editing programs** often have their own distinctive features and properties, they come with automatic properties that enhances images and also correct color hue and brightness imbalances as well as other image editing features, such as:

- Adjust Color
- Color Fill
- Color Hue
- Color Saturation
- Auto Brightness/contrast
- Red eye removal
- Zoom features
- Sharpness adjustments
- Brush Tool
- Automatic cropping
- Manual cropping etc.

**The editing software properties also include** organizing capabilities such as keyword search, thumbnails, or rating or query, view image formats, preview interface etc.



# *Types of Image Editing Softwares*

**Some of the types of image editing softwares are:**

1. Corel Paint Shop
2. ProAdobe Photoshop
3. Elements Serif
4. PhotoPlusXara
5. Photo & Graphic Designer
6. ACDSee Photo Editor
7. Photo Explosion
8. Ulead PhotoImpact
9. PhotoImpression
10. PhotoStudio
11. Photolightning
12. Adobe Light Room



## *Benefits of Image Editing*

**There are many benefits of image editing**, one of the most important image editing benefits is that, the dark, dull and raw images look refreshed and come alive with the help of photo enhancement techniques. Images get a new touch of life with contrast, brightness and colours with effective measures.

**Image Editing procedure** is a very important process that involves various tasks such as, correction mask, clipping path, removal of unwanted objects, color correction, cartooning, and flash animation among many others. It's obvious that these are all a part of creative methods that can simply make your images outstanding, hence, are very advantageous for customers from different sectors and industries. With these services customers can be able to create and separate objects from their background, correct colors and adjust tone in images, insert extra photographs or graphics in the photographs, remove unwanted elements from your images, change the colour of all the sections of a picture , give photographs a singular shape and incorporate 3D effects within the images.

**All these many advantages** have made image editing a widely preferred choice all over the world. Editing are also being demanded for domestic, commercial and industrial applications.

**Photo editing gives images more beauty and gives it meaning** making a professional from the raw image. Image Editing is a thorough work of creativity, innovative, and esthetic act. Image Editing gives more meaning and adds value to raw images.

**Some other benefits are listed below:**

1. Better Sales
2. Brand Building
3. Build Respectability and Credibility.
4. Reuse Images for Better Efficiency.
5. Robust Social Media Strategy.
6. Photo-intensive Tasks Become Easier.
7. Easy Multi-platform Customization.



## *Why Study Image Editing*

1. Gain essential editing knowledge and skills
2. Become a professional in image editing
3. Job opportunities and career advancement
4. Enrich your CV and increase your earning potential
5. Self-employment opportunity as a graphic designer

## *Image Editing Course Outline*

- Image Editing - Introduction
- Image Editing - Getting Started
- Image Editing - Softwares
- Image Editing - Making Basic Adjustments
- Image Editing - Fixing Common Problems
- Image Editing - Sharing Photos Online
- Image Editing - Printing Photos
- Image Editing - Editing Photos
- Image Editing - Editing with Adobe Photoshop
- Image Editing - Editing with Adobe Light Room
- Image Editing - Video Lectures
- Image Editing - Exams and Certification







# BISMARCK

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**INDUSTRIAL SAFETY ENGINEERING COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Industrial Safety Engineering?*

**Industrial Safety Engineering** is a discipline in engineering that makes sure that industrial engineered systems operate with an acceptable level of safety. It is directly related to systems engineering, industrial engineering and subset system of safety engineering.

**Safety Engineering** makes sure that a life-critical system operates as needed, even when system components fail. The main aim of this course is to equip engineering students and personnel with scientific know-how and orientation in practice and theory in the area of safety, health and hygiene.

**Workplace Safety is a composite field of study** that is related to the safety department, health, and welfare of people at work on a site or in an organization. It summarizes the various strategies and methods that are put in place to ensure the safety and health of employees within the workplace.

**Workplace Safety is made up of employee awareness** that is related to the knowledge of basic safety, workplace hazards, implementation of hazard preventions, risks relating to hazards, and putting into practice necessary safer techniques, methods, process, and safety culture in the workplace.

**Industrial Safety Engineering also involves the safety rules and regulations** that are designed mostly on the basis of already existing government policies. Every organization ensures that a number of safety rules and regulations are put in place for its staff and employees. Safety education and training for employees are periodically imparted with a view to making them aware of and updating them with the latest safety measures.

**Industrial Safety Engineering involves the maintenance and safety** of all the assets of the organization. In this course, we would be discussing the various aspects of the safety that are related to employees and their working environment.



# *Elements of Industrial Safety*

**1. Management Commitment:** Your company commits adequate resources to workplace safety and health, including staff, training, and equipment. Management sets the example of safe and healthful behavior. A clearly established policy for worker safety and health protection is communicated to all employees, and Supervisors are held accountable for safety and health as part of their job.

**2. Hazard Assessment:** A hazard assessment process can help your company avoid and control risks. It should include - An Ongoing monitoring and maintenance of equipment to prevent it's becoming hazardous, Prompt investigation of accidents, near-misses, and incidents of injury or illness to identify causes and corrective actions. An annual comprehensive safety and health program audit, and regular reviews by people qualified to recognize existing hazards and potentially significant risks. This can be done by in-house staff, or by a third-party safety professional. And a reliable procedure that allows employees to report possibly hazardous conditions without fear of reprisal and to receive appropriate and timely responses.

**3. Safety Rules And Work Procedures:** Your safety program should include safety plans, rules and work procedures for specific operations at your company. The plan should establish procedures for response to emergencies requiring personal protective equipment, first aid, medical care, or emergency evacuation, with emergency telephone numbers and exit routes visible to all employees, and provide training and drills as needed. The rules should be thoroughly understood by supervisors and employees

**4. Safety Training:** The company's training program should ensure that employees understand hazards and safe work procedures, where personal protective equipment is required, employees understand the requirement, the reasons for it, the limitations of the equipment, and how to maintain and use it properly.

**5. Safety Performance Tracking And Improvement:** This includes record-keeping and tracking of key leading safety indicators to measure and continuously improve their safety performance.



## *Features of Industrial Safety Engineering*

**There are many features of Industrial Safety Engineering and some of them are:**

1. Industrial Safety Engineering ensures for the preservation of and assistance for the staff or employees health and well-being.
2. Industrial Safety Engineering enhances the productivity of employees by making sure of a safe and congenial work environment.
3. Industrial Safety Engineering makes sure that the growth of the organization remains free from prospective mishaps and hazards.
4. Industrial Safety Engineering encourages a favorable social climate in the manufacturing firm that motivates the employees to efficiently work towards organizational progress and prosperity.
5. Industrial Safety Engineering secures the health and safety of workers and the workplace by eliminating or minimizing risks that can be encountered by coming in contact with machines and equipment.
6. Industrial Safety Engineering lets you attain higher productivity levels among the employees by providing them with a safe and secure environment
7. Industrial Safety Engineering lets you focus on your employees' safety and health coming up from chemicals and hazardous elements that are used at workplaces.



## *Benefits of Industrial Safety Engineering*

**There are many benefits of Industrial Safety Engineering and some of them are:**

1. Industrial Safety Engineering greatly reduces the number of accidents that occurs in a manufacturing firm.
2. Industrial Safety Engineering lets your workers stay healthy and energetic.
3. Industrial Safety Engineering lets you create public awareness of a particular hazard or preventive maintenance.
4. Industrial Safety Engineering lets organizations and industries avoid loss of Property and Life.
5. Industrial Safety Engineering lets you devise planning for safety

## *Why Study Industrial Safety Engineering?*

1. Career Opportunities And Advancement.
2. Become Industrial Safety Professional.
3. Increase Your Earning Potential.
4. Improve Your Knowledge of Safety Precautions and Procedures.



# *Industrial Safety Engineering Course Outline*

- Industrial Safety - Definition and Programmes of Industrial Safety
- Industrial Safety - Origin, History and Development of Industrial Safety Movement
- Industrial Safety - Need and Significance of Industrial Safety
- Industrial Safety - Occupational Safety and Health Management System (OSHMS)
- Industrial Safety - Identification of Industrial Hazard
- Industrial Safety - Major Hazard Control
- Industrial Safety - Types and Causes of Industrial Accidents
- Industrial Safety - Factors Contributing to Industrial Accidents
- Industrial Safety - Industrial Management
- Industrial Safety - Roles of Management in Ensuring Industrial Safety
- Industrial Safety - Establishment of Safety Management Systems
- Industrial Safety - Vitalization of Safety Management Activities
- Industrial Safety Engineering - Video Lectures
- Industrial Safety Engineering - Exams and Certification





# **BISMARCK**

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## **INFORMATION SECURITY AND CYBER LAW COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Information Security and Cyber Law*

**Information Security and Cyber Law** is the study of both Information Security concepts and Cyber law policies to tackle Cyber Crimes.

## *What is Cyber Law*

**Cyber Laws** are the set of rules, regulations and policies put in place to fight Cyber Crimes. Cyber Law is the sole savior in fighting cyber-crime. It is only through strict laws that unbreakable security could be provided to safe-guard valued information.

## *What is Cyber Crime*

**Cyber Crimes** are considered as illegal unethical and/or unauthorized behavior of people relating to the automatic processing, transmission and manipulation of data through the use of Computer Systems and Networks to cause harm to the victim.

**Offences committed against individuals, organizations or groups of individuals** with a criminal motive to intentionally harm the reputation of the victim or cause physical or mental harm, or loss, to the victim directly or indirectly, using modern telecommunication networks such as Internet (networks including chat rooms, emails, notice boards and groups) and mobile phones (Bluetooth/SMS/MMS) is also referred to as Cyber Crime. Cybercrime also tends to threaten a person or a nation's security and financial health.

**According to Wikipedia; Cybercrime, or computer-oriented crime,** is the crime that involves a computer and a network. The computer may have been used in the commission of a crime, or it may be the target but before a cybercrime takes effect, it needs a space called “Cyber Space”.

## *What is Cyber Space?*

**Cyber Space is an intricate environment** that involves interactions between people, software, and services and it is in this environments that all cyber activities occur and in other to prevent the harms and damages caused by cybercrimes, security measures were put in place to regulate, control and prevent cybercrimes from further occurring leading to security breaches.





## *What is Cyber Security?*

**Cyber Security** entails the technological processes and techniques introduced to protect our data, networks, even our computers from unauthorized persons.

## *Advantages of Information Security and Cyber Law*

**The advantages are numerous, some of which are:**

1. It helps to protect individuals, small and large scale organizations including nations from malicious cyber attacks and intellectual property theft.
2. It helps to safeguard information and information infrastructures in cyberspaces.
3. It helps to build a secure digital environment and cyber space for citizens, businesses and the government.
4. It helps to reduce and minimize damages from cyber incidents through a combination of institutional structures, policies, process, technology and cooperation.
5. It promotes information security awareness.
6. It helps to keep individuals informed about the latest trend in cyber security and the laws governing actions on the internet.
7. It helps to identify attacks such as phishing, DDOS and helps to provide necessary safeguard measures.
8. It provides protection of sensitive data and assets in organisations.
9. It helps us to be aware of the dos and don'ts of the cyberspace.
10. It builds users confidence in using devices with internet connection.



## *Principles of Information Security*

There are lot of principles in reference to Information Security but the major Principles of information security are:

1. Confidentiality,
2. Integrity, and
3. Availability.

These principles help cub information from leaking or floating around without the required authorization.

## *Principles of Cyber Law*

**There are some policies placed to alleviate cyber risks in cyber space and such include:**

1. Research and Development,
2. Human Resource Development,
3. Investment into Cyber Threat Intelligence,
4. Creation of Cyber Security Awareness,
5. Raising or implementation of cyber framework among others.

**In as much as there are policies set to regulate these crimes,** there are also modes of solving these crimes; both the already unleashed ones and the sniffed or detected ones. Such strategies include:

1. Securing of the E-Governance Services,
2. Creation of Mechanisms for IT Security,
3. Creating a Secure Cyber Ecosystem,
4. Creating an Assurance Framework,
5. Encouraging Open Standards,
6. Strengthening the Regulatory Framework,
7. Protecting Critical Information Infrastructure etc.

**Cyber Crime is being practiced every time,** but is still hardly reported. Very few cases of cybercrime reaches the court because of difficulties in gathering, storing and appreciating Digital Evidence. Thus the Act has miles to go before it can be truly effective globally.

**In the Full Course, you will extensively understand everything about Information Security and Cyber Law,** ranging from the theories to the practice, including softwares and applications involved, policies, laws, principles, precautions and security measures with **Certification** to showcase your knowledge/skill gained.



# *Information Security and Cyber Law Course Outline*

Information Security and Cyber Law - Introduction  
Information Security and Cyber Law - Objectives  
Information Security and Cyber Law - Intellectual Property Right  
Information Security and Cyber Law - Cyber Security Strategies  
Information Security and Cyber Law - Policies To Mitigate Cyber Risk  
Information Security and Cyber Law - Network Security  
Information Security and Cyber Law - Information Technology Act, 2000  
Information Security and Cyber Law - Digital & Electronic Signatures  
Information Security and Cyber Law - Offences and Penalties  
Information Security and Cyber Law - Cyber Law Summary  
Information Security and Cyber Law - Video Lectures  
Information Security and Cyber Law - Exams and Certification





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## **INFORMATION TECHNOLOGY FUNDAMENTALS COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

# *What is Information Technology Fundamentals?*

**Information Technology** mostly abbreviated as I.T is the use of computers to accept, store, recover, send, and process data or information.

**I.T - Information Technology** is a subset of Information and Communications Technology (I.C.T). An information technology system is both an Information System and Communications System or, more precisely, a Computer System that includes all the hardware, software and peripheral equipment that are operated by a small section or department of an organization.

**Companies that are in the Information Technology field** are often referred to as belonging to the "Tech Sector" or the "Tech Industry". Infact many companies that are not directly in the tech industry now have an Information Technology department for managing the networks, computers, internet and other technical areas of their business operations, which speaks volume of the importance of I.T in any organization.

**In an Academic setting**, the Association that is responsible for Computing Machinery describes Information Technology as "undergraduate degree programs that are used to equip and develop students to meet up with the Computer Technology needs of a business, health-care, government, schools and other kinds of organizations.

**I.T Specialists** are individuals who take up the duty of selecting both hardware and software products that are suitable for the operations of an organization, combining these products into organizational infrastructure to meet needs, such as installing, maintainance and customizing these applications for the users of the organization. I.T Specialist of an organization can be a web designer, network administrator, graphic designer, software developer, systems engineer etc. depending on the area of focus of the organization.

**The Job of I.T Specialists and I.T Managers** also include computer network administration, software programming/development, installation, management and planning of an organization's technology delivery, software and hardware maintenance and supervision etc.



# *Components of Information Technology*

**Information Technology is made up of the following components, they are:**

**1. Computer Technology:** The widespread use of computer technology has made magic development in the information transmission processes, in every field of human endeavor for decades. Computers provide extremely rapid access to the information that is necessary to support decision making in all areas. Computers are used for precision, accuracy, speed and processing of large amounts of data involving complete operation.

**2. Communication Technology:** The recent I.T revolution has transformed the communication-conscious human society into, an information global village in a short span of just two decades. The new technologies like the laser, fiber optics, telephone, teleprinter, telex, television dictaphone, silicon chip, Internet and many other telecommunication devices have come to constitute an important and inevitable component of the written and oral communication media network. These modern communication technologies have the potential to bypass several stages and sequences in the process of development encountered in the earlier decades.

**3. Telecommunication Technology:** Telecommunications are devices and techniques used for transmission of information over long distances via wire, radio/satellite without damaging/loss due to noise and interference. The major trends in telecommunications at present are a fundamental shift from mechanical to electrical furthermore, electronic, and within electronic, analog to digital modes of transmission involving all types of communications voice, facsimile, computer transmission, TV communicators, microwave and satellite communications, and radio links.

**4. Satellite Communication Technology:** Communication Satellites have some interesting properties that make them attractive for many applications. A communication satellite can be thought of like a big microwave repeater in the sky. It contains several transponders, each of which listens to some portion of the spectrum, amplifies the incoming signal and then rebroadcasts it at another frequency, to avoid interference with the incoming signals.

**5. Computer Communication Technology:** Computing and communication are natural allies. Both concern information when computing, we manipulate and transform information; we transport information.



# *Features of Information Technology*

**There are many features of Information Technology and some of them are:**

1. The development of Information Technology has made the education system easier, simpler and widespread. Now, even people who are in remote areas can also make use of technology for their children's education and also enjoy the benefits of adult education.
2. Information Technology allows for fast economic development.
3. Information Technology helps in the development of remote areas.
4. Information Technology helps the police in nabbing criminals.
5. The judiciary and other administrative services can also make use of Information Technology to make their work faster and easier.
6. Knowledge of computers is an essential feature of Information Technology as computers are used to make very tedious tasks easier.



# *Benefits of Information Technology*

**There are lots of benefits of Information Technology and some of them are:**

1. Information Technology allows for remote accessibility of information.
2. Information Technology brings about the creation of new jobs
3. Information Technology makes the educational sector easier and more enhanced.
4. Information technology in the health sector allows for the development of more sophisticated drugs and medicinal procedures.
5. Information Technology brings about more advancement in economies.
6. Information Technology allows you to communicate news articles more efficiently
7. The Entertainment industry is greatly affected by Information Technology as it made it easier to be distributed across remote locations.
8. Information Technology brings about effective communication.
9. Information Technology brings about more accurate and speedy processing of information





## *Why Study Information Technology?*

- 1. Career Choices:** Information technology is diverse, and you can choose from a variety of career paths.
- 2. Flexible Work Lifestyle:** Working in a field in IT means having the ability to work on your own terms.
- 3. Always On-demand:** There's an ever-increasing need for professionals in the IT field, the better your skill the more in demand you would be.
- 4. Increase Your Earning Potential:** Working in the IT industry and combined with a good skill-set, guarantees good pay.
- 5. Job Opportunities and Career Advancement**

## *Information Technology Course Outline*

- Information Technology - Introduction
- Information Technology - Number System and Codes
- Information Technology - Logic Gates
- Information Technology - Computer Components
- Information Technology - Information Processing Cycle
- Information Technology - Hardware and Software
- Information Technology - Communication and Networks
- Information Technology - Operating Systems
- Information Technology - Data Processing
- Information Technology - Internet and Network Security
- Information Technology - Video Lectures
- Information Technology - Exams And Certification





# BISMARCK

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**INTERNET OF THINGS (IOT) COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Internet Of Things (IoT)?*

**Internet of Things (IOT)** is the inter-connectivity of computing devices that are embedded in everyday objects, enabling them to send and receive data. It is simply defined as an extension of internet connectivity introduced into physical devices and everyday objects. These physical devices range from ordinary household objects to sophisticated industrial tools.

**IOT is basically a system of interrelated computing devices**, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and has the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

**With IoT**, it's possible to turn anything, from a paper to an airplane, to a self-driving car, to a smart home device. IoT gives a level of digital intelligence to devices, enabling them to communicate data real-time without a human pulling the strings, thereby effectively merging the digital and physical worlds.



# *Applications Of IoT - Internet of Things*

**The application of IoT to real-life problems is endless.** It can be applied in our day to day activities such as business operations, home chores, community, medical, entertainment and so many more. Its applications are endless in almost all spheres of Life.

**For instance in Medical Fields,** for Animal/Pet monitoring, Public utilities such as street light, CCTV cameras, waste management, monitoring and control. Divers form of Alarm systems can be managed by this technology-IoT.

**Some Applications Of IOT include:**

**1. Wearables to Track Human Health:** IoT enabled wearables can be used to track and monitor general human health. IoT wearables enable people to better understand their own health and allow physicians to remotely monitor patients.

**2. Improve Efficiencies in Manufacturing:** With IoT, you can increase manufacturing power effectively. Machines can be continuously monitored and analyzed to make sure they are performing within the required tolerances. Products can also be monitored in real-time to identify and address quality defects.

**3. Improve Existing Mundane Processes:** With IoT based devices, we can improve and increase the time spent on carrying out some processes. Like for instance the time a farmer spent monitoring each crop can significantly speed up using IoT enabled drone.

**4. Smart Home Devices:** In the consumer segment, for example, smart homes that are equipped with smart thermostats, smart appliances, and connected heating, lighting and electronic devices can be controlled remotely via computers and smartphones.



## *Industries IoT Can Be Applied*

**1. Medical and Health Center:** In healthcare, IoT offers many benefits, including the ability to monitor patients more closely in order to use the data that's generated and analyze it to better understand patients. Doctors, nurses, and orderlies often need to know the exact location of patient-assistance assets such as wheelchairs. When a hospital's wheelchairs are equipped with IoT sensors, they can be tracked from the IoT asset-monitoring application so that anyone looking for one can quickly find the nearest available wheelchair.

**2. Manufacturing Industry:** This is another industry that IoT can help make manufacturing and production of products faster with error tolerance. Manufacturers can gain a competitive advantage by using production-line monitoring to enable proactive maintenance on equipment when sensors detect an impending failure.

**3. Agriculture Industry:** In agriculture, IoT-based smart farming systems can help monitor, for instance, light, temperature, humidity and soil moisture of crop fields using connected sensors. With IoT, drones can be deployed to monitor plants and crops in order to quickly detect crops with pest and diseases.

**4. Retail Industry:** In retail, IoT applications lets them manage inventory, improve customer experience, optimize the supply chain, and reduce operational costs. For example, a retail company may employ smart shelves fitted with weight sensors can collect RFID-based information and send the data to the IoT platform to automatically monitor inventory and trigger alerts if items are running low.

**5. Auto Industry:** In the auto section, IoT can be applied in various ways. IoT enabled sensors can detect impending equipment failure in vehicles already on the road and can alert the driver with details and recommendations. IoT devices can be installed on vehicles for various tasks, for instance, you can make your electric gate whenever it senses your car coming close to it.



# *Advantages Of The Internet Of Things (IoT)*

1. Internet of Things helps to achieve optimal results and excellent outputs.
2. Internet of Things allows the use of small devices for operations.
3. Internet of Things offers improved customer engagement.
4. Internet of Things offers technology optimization.
5. Internet of Things enhances data collection.
6. Internet of Things reduces waste.

## *Key Features of Internet of Things - IoT*

**The features or characteristics of the Internet of Things - IoT are:**

### **1. Intelligence:**

Intelligence in IoT is concerned with the smart and seamless interactions between devices, while user and device interaction are achieved by GUI - Graphical User Interface and Standard Input Methods.

### **2. Connectivity:**

Connectivity in IoT brings together everyday objects/devices. It facilitates network connectivity, accessibility, and compatibility in the things.

### **3. Dynamic Nature:**

Dynamic Nature in IoT is responsible for dynamic changes that take place around the connected devices such as; sleeping and waking up, connected or disconnected, state of devices including temperature level (hot/cold) and location.

### **4. Sensing:**

Sensing in IoT is powered by certain sensors that are designed to detect or measure any changes in the environment in order to generate data that can report on their status or even interact with the environment.

### **5. Heterogeneity:**

Heterogeneity in the Internet of Things is responsible for supporting direct network connectivity between heterogeneous networks. The requirements for heterogeneous things in IoT are scalability, modularity, extensibility, and interoperability.

### **6. Security:**

Security in IoT is an important area because IoT devices are naturally vulnerable to security threats. and It is important to secure the endpoints, the networks, and the data that is transferred across all things involved.



## *Why Study The Internet Of Things (IoT)*

1. Internet Of Things study enables students to understand the basic aim of IoT inventions which is aimed at connecting any device with an "on or off" switch to the internet.
2. Students who study IOT will be acquainted with the requisite knowledge of the IoT concept and its application to modern-day usage of computers, internet and information technology in general.
3. Knowledge of IoT includes everything from cell phones, coffee makers, washing machines, headphones, wearable devices, etc. This also extends to components of machines, e.g jet engine.
4. Studying IOT helps students to know that, IoT is a giant network of connected "things" (which includes people). The relationship will be between people-people, people-things, and things-things.
5. Knowledge of IoT can also be applied to things like transportation networks in "Smart cities", which can help us reduce waste and improve efficiency in energy usage, etc.
6. Internet of Things is a system that allows users to achieve better results using the best technological tools (Software, Hardware, and Modern Attitude).
7. It makes work effortless, effective and efficient bringing about optimum outputs.
8. It provides job opportunities and career advancement for I.T professionals.
9. Enrich your CV and increase your earning potential by getting certified

**In the Full course, you will learn everything you need to know about the Internet of Things - IoT with Certification to showcase your knowledge/skill gained.**



# *Internet of Things - IoT Course Outline*

Internet of Things - Introduction/Overview  
Internet of Things - Hardware  
Internet of Things - Software  
Internet of Things - Technology & Protocols  
Internet of Things - Common Uses  
Internet of Things - Media, Marketing, & Advertising  
Internet of Things - Environmental Monitoring  
Internet of Things - Manufacturing Applications  
Internet of Things - Energy Applications  
Internet of Things - Healthcare Applications  
Internet of Things - Building/Housing Applications  
Internet of Things - Transportation Applications  
Internet of Things - Education Applications  
Internet of Things - Government Applications  
Internet of Things - Law Enforcement Applications  
Internet of Things - Consumer Applications  
Internet of Things - Thingworx  
Internet of Things - CISCO Virtualized Packet Zone  
Internet of Things - Salesforce  
Internet of Things - GE Predix  
Internet of Things - Eclipse  
Internet of Things - Contiki  
Internet of Things - Security  
Internet of Things - Identity Protection  
Internet of Things - Liability  
Internet of Things - Video Lectures  
Internet of Things - Exams and Certification







# BISMARCK

TECHNOLOGY & LEARNING INSTITUTION LIMITED

Every Life, Every Moment, Every Day. A New Discovery...

**INTERNET TECHNOLOGIES COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Internet Technologies?*

**Internet Technologies** consists of the softwares, hardwares and protocols used in the connection of two or more devices to share information either within a small network or as part of a larger network.

**The Internet is a vast network of networks** that spans the entire globe. Data is transferred from computer to computer, and from network to network, using packet-switching technology and a suite of Internet protocols called TCP/IP, after its two most important protocols.

**Internet Technologies** allows users to access information and communication over the World Wide Web (Web browsers, FTP, e-mail, associated hardware, Internet service providers, and so forth).

## *Examples of Internet Technologies*

**Some of the examples of Internet Technologies are:**

1. Local Area Networks (LANs),
2. Wide Area Networks (WANs),
3. Bridging,
4. Switching,
5. Routing,
6. Voice and Data Integration,
7. Wireless Integration,
8. Dial-up Technology,
9. Cable Access Technology,
10. Network Security and Network Management.



## *Internet Technologies Basics*

**The Internet is a worldwide collection of computer networks** that began as a single network that was originally created in 1969 by ARPA. Internet is usually referred to as Super Information Database and below are some basics things to know on Internet Technologies:

1. Internet is a worldwide global system of interconnected computer networks.
2. Internet uses the standard Internet Protocol (TCP/IP).
3. Every computer on the internet is identified by a unique IP address.
4. IP Address is a unique set of numbers (such as 110.22.33.114) which identifies a computer location.
5. A special computer DNS (Domain Name Server) is used to give a name to the IP Address so that the user can locate a computer by a name. For example, a DNS server will resolve a name <https://www.siiitgo.com> to a particular IP address to uniquely identify the computer on which the website is hosted.
6. The Internet is accessible to every user all over the world.



# *Advantages of Internet Technologies*

## **Some of the advantages of Internet Technologies**

1. It offers ease of communication.
2. It facilitates information sharing.
3. It improves learning such as the introduction of online education, social learning, elearning etc.
4. File sharing is effortless and convenient.
5. It offers Social Networking.
6. It offers E-Commerce.
7. It offers Online Advertising.
8. It makes information more open and accessible.
9. It offers online payments and transactions.
10. It provides job opportunities.
11. It provides avenue for self-employment such as e-business.



# *Types of Internet Technology Connections*

## **1. Analog: Dial-up Internet Access**

This is also known as dial-up connection. In this type of connection a modem is connected to your PC, then the computer dials a phone number via the modem and connects to the network which is provided by your ISP. Dial-up connection is an analog connection because data is sent over an analog telephone network.

## **2. ISDN - Integrated Services Digital Network**

ISDN is a communication standard, designed for sending data, voice and video over telephone lines. The ISDN speed can range from 64 Kbps to 128 Kbps .

## **3. B-ISDN - Broadband ISDN**

Broadband ISDN transfers data over fiber optic telephone lines.

## **4. DSL – Digital Subscriber Line**

DSL uses existing 2-wire copper telephone lines connected to the premise so that service is delivered simultaneously with wired telephone service. DSL has two two main categories for home use, they are ADSL and SDSL.

## **5. ADSL - Asymmetric Digital Subscriber Line**

ADSL technology supports data rates from 1.5Mbps to 9 Mbps when receiving data known as the downstream rate and from 16 to 640 Kbps when sending data known as the upstream rate.

## **6. ADSL+2 - ADSL Extension**

ADSL Extension provides users with significantly faster speeds including download speed when compared with regular ADSL connections.

## **7. SDSL - Symmetric Digital Subscriber Line**

SDSL technology allows more data to be sent over existing copper telephone lines. SDSL sends digital pulses in high-frequency area of telephone lines/wires.

## **8. VDSL - Very High DSL**

Very High DSL is also called VDSL. VDSL is simply a DSL technology that is designed to provide faster data rates over short distances, so that the shorter the distance, the faster the connection rate.



# *Types of Internet Technology Connections*

## **9. Cable - Broadband Internet Connection**

Broadband Internet Connection is made possible through the use of cable modems that is designed to operate over cable TV lines. Cable or Broadband Internet uses TV channel space for data transmission. Cable or Broadband Internet speed can range from 512 Kbps to 20 Mbps.

## **10. Wireless Internet Connections**

Wireless Internet Connection is one of the most used and modern Internet connection types. Wireless Internet Technology offers an always-on connection which can be accessed from anywhere — as long as you are geographically within the network coverage area or the base station area.

## **11. T-1 Lines – Leased Line**

T-1 lines is a dedicated phone connection supporting data rates of 1.544Mbps.

## **12. Bonded T-1**

A bonded T-1 is two or more T-1 lines that have been joined (bonded) together to increase bandwidth. Where a single T-1 provides approximately 1.5Mbps, two bonded T1s provide 3Mbps or 46 channels for voice or data.

## **13. T-3 Lines – Dedicated Leased Line**

T-3 lines are designed to support data rates of about 43 to 45 Mbps. T-3 lines are used mainly and mostly by ISPs -Internet Service Providers for connecting to the Internet backbone.

## **14. OC3 - Optical Carrier**

This is used to specify the speed of fiber optic networks conforming to the SONET standard. Speed can range from 155.52 Mbps upward.

## **15. Internet over Satellite**

Internet over Satellite (IoS) allows users to access the Internet via a satellite placed in the space. A satellite is normally situated at a fixed point above the earth's surface.

**In the Full course, you will learn everything you need to know about Internet Technologies with Certification to showcase your knowledge.**



# *Internet Technologies Course Outline*

Internet Technologies - Internet Introduction/Overview  
Internet Technologies - Intranet Introduction/Overview  
Internet Technologies - Extranet Introduction/Overview  
Internet Technologies - Reference Models  
Internet Technologies - Domain Name System  
Internet Technologies - Services  
Internet Technologies - Connectivity  
Internet Technologies - Protocols  
Internet Technologies - E-Mail Introduction/Overview  
Internet Technologies - E-Mail Protocols  
Internet Technologies - E-Mail Working  
Internet Technologies - E-Mail Operations  
Internet Technologies - E-mail Features  
Internet Technologies - E-Mail Etiquettes  
Internet Technologies - E-mail Security  
Internet Technologies - E-mail Providers  
Internet Technologies - Websites Overview  
Internet Technologies - Websites Types  
Internet Technologies - Website Designing  
Internet Technologies - Websites Development  
Internet Technologies - Website Publishing  
Internet Technologies - Website URL Registration  
Internet Technologies - Website Hosting  
Internet Technologies - Website Security  
Internet Technologies - Search Engine Optimization  
Internet Technologies - Website Monetization  
Internet Technologies - WWW Overview  
Internet Technologies - Web Pages  
Internet Technologies - Web Browsers  
Internet Technologies - Web Servers  
Internet Technologies - Proxy Servers  
Internet Technologies - Search Engines  
Internet Technologies - Internet Collaboration  
Internet Technologies - Collaboration Overview  
Internet Technologies - Mailing List  
Internet Technologies - Usenet Newsgroup  
Internet Technologies - Online Education  
Internet Technologies - Social Networking  
Internet Technologies - Internet Security Overview  
Internet Technologies - Data Encryption  
Internet Technologies - Digital Signature  
Internet Technologies - Firewall Security  
Internet Technologies - HTML  
Internet Technologies - CSS  
Internet Technologies - JavaScript  
Internet Technologies - PHP  
Internet Technologies - Video Lectures  
Internet Technologies - Exams and Certification





# BISMARCK

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Every Life, Every Moment, Every Day. A New Discovery...

**I.T PROJECT MANAGEMENT COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**



## *What is I.T Project Management*

**I.T Project Management** is the total process involved in planning, organizing and defining the tasks and responsibility of a project team and coordinating them for the completion of an organizations' information technology (I.T) goals.

**I.T Project Management can also be defined** as the use of hardware, software and network analysis to executive an organization I.T task within a certain period of time. I.T Project Management engages the use of both human and tech resource to achieve a desired I.T goal.

## *Advantages of Studying I.T Project Management*

1. Better control of physical resources, human resources, financial and tech resources.
2. Improved customers relations and satisfaction.
3. Higher profit margins for higher worker morale.
4. It helps in using modern skills and tools to save project cost and time.
5. It help to avoid wastage of human, natural and capital resources to achieve quality result.
6. It also helps to deliver unique product, service and desired results within time schedules.
7. It improves quality decision making that will drive growth.
8. It helps to provide accurate analysis of project planning and execution.

## *What is a Project?*

**A project** is a set of organized pracitcal activity put together to meet the creation of a unique product and services.



## *Who is a Project Manager?*

A **project manager** is the person who takes the lead role and coordinates the project team. A good project manager must have a sound understanding of the principal cost of the project, human resources and skills required, knows the difference between profit and profit margin, understand whether the project is short term, middle term or long term, and the required financial budget for the completion of the project.

## *Attributes of a Project*

1. A project has a unique purpose
2. A project requires resources
3. A project is temporary
4. A project should have primary sponsor
5. A project must be developed using progressive elaboration.

## *Examples of I.T Project*

1. A multinational firm decides to consolidate its information system into an integrated enterprise resource management approach
2. A television network implement a system or application to allow viewers to vote for contestant and provide other feed back on programs via social media sites.
3. A student creates smart phone application in order to sell it online
4. A company creates a software for tracking sales and inventory etc.



## *Project Constraints*

Project constraints are basically anything that restricts or limits the actions and responsibilities of the project team. Such as inadequate funding, poor staffing, poor management etc.

## *Attributes of I.T Projects*

1. Time Frame
2. Purpose
3. Ownership
4. Cost and Resources
5. Roles
6. Risks and Assumptions
7. Interdependent Tasks
8. Organizational Change

## *Projects Success*

1. Project must meet scope, time and cost goals
2. The project must satisfy the customers need
3. The result of the project must meet its main objectives
4. The outcome of the project must meet organizational aims and objectives



## *What Helps Projects Succeed*

1. User Involvement
2. Executive Support
3. Clear business Objectives
4. Emotional Maturity
5. Adequate Funding
6. Project Management Expertise
7. Good Test-Running
8. Optimizing Scope
9. Staff Expertise
10. Engagement from all stakeholders etc.

**In the Full Course you will learn everything you need to know about I.T Project Management with Certification** to showcase your knowledge.

## *I.T Project Management Course Outline*

- I.T Project Management - Introduction to Project Management
- I.T Project Management - The Project Management and Information Technology Context
- I.T Project Management - The Project Management Process Groups: A Case Study
- I.T Project Management - Project Integration Management
- I.T Project Management - Project Scope Management
- I.T Project Management - Project Time Management
- I.T Project Management - Project Cost Management
- I.T Project Management - Project Quality Management
- I.T Project Management - Project Human Resource Management
- I.T Project Management - Project Communications Management
- I.T Project Management - Project Risk Management
- I.T Project Management - Project Procurement Management
- I.T Project Management - Project Stakeholder Management
- I.T Project Management - Video Lectures
- I.T Project Management - Exams and Certification





# BISMARCK

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Every Life, Every Moment, Every Day. A New Discovery...

**ITIL COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is ITIL?*

**ITIL** - Information Technology Infrastructure Library is a guiding principle that provides best practices for day to day business activities, particularly in IT Service Management (ITSM) towards achieving improved service delivery and customers satisfaction.

## *Why ITIL?*

1. ITIL focuses on solving business issues in relation with customer satisfaction rather than just improving IT capabilities.
2. ITIL certification at each level requires in-depth knowledge and understanding of it's process, it is designed for IT practitioners who are involved with technology and digital teams throughout the organization, not just in the IT department.
3. ITIL's processes has become the de facto standard for effective IT Service Management.
4. ITIL helps organizations across industries offer their services in a quality-driven and economically efficient pattern.
5. ITIL provides a robust framework for identifying, planning, delivering and supporting IT services that can be adapted and applied to all business and organizational environments.



# *Advantages of ITIL*

## **The benefits of ITIL include:**

1. It helps to complete projects successfully in due or set time.
2. It helps to implement services that are specific and valuable to customers.
3. It helps to reduce cost of ownership by applying financial management.
4. It helps to build customer's confidence and satisfaction.
5. It helps to maintain customer business relationship.
6. Improves efficiency towards achieving predictable service delivery.
7. Gain invaluable Insights into best practices for achieving cost-effective IT solutions.
8. Detailed guidelines and standards for achieving business oriented goals using a proven framework.
9. Reduction in risk and failure associated with businesses.
10. Improved customer relations through delivery of efficient and timely services.
11. Allows for continuous service improvement needed for a stable environment for growth, scalability and change.



# *ITIL Study Structure*

Here are a few things you should know;

## **1. The Basics**

ITILv3 has five different certification levels:

1. ITIL Foundation
2. ITIL Intermediate Level
3. ITIL Managing Across the Lifecycle
4. ITIL Expert Level
5. ITIL Master Qualification

Most popular among the above is the foundation certification, which is needed to progress to other certification stages.

## **2. The Test**

Keep it simple by preparing yourself for the examination that you are taking, studying for various levels is quite impossible. ITIL generally involves intensive study and tough exams as well as work experience, so if you're looking to take the higher levels of ITIL, it's best to approach them one by one.

## **3. Study Guides**

ITIL consists of five volumes covering specific practices of IT service management. You will need to study guides to help you narrow down what you need to know to pass the exam you're taking. We offer online quality resources and training courses that can help you prepare.

## **4. Getting Certified**

ITIL may include an exhaustive set of guidelines, how-to's and best practices in its framework. Some may already be familiar with these processes due to work experience, but it's never too late to begin studying for the certification.





## *Why Study ITIL?*

1. Apply IT service management and solutions to real world businesses to enhance business and financial growth.
2. To Gain skills and insights on IT processes needed for customer growth maximization and satisfaction.
3. Learn strategies on how to use the ITIL framework and processes for cost effective management.
4. To Maximize Productivity and Increase Profitability
5. For Job Opportunity and Career Advancement



# *The ITIL Process Stages*

**The ITIL processes are grouped into various stages:**

1. Service Strategy,
2. Service Design,
3. Service Transition,
4. Service Operation,
5. Continual Service Improvement.

**The Service Strategy:** involves the specific services required by the customers, definitions of the financial process, the capability and skills involved to accomplish the project/service.

**The Service Design:** process includes the design of the project/services, as well as changes and improvements to existing ones.

**The Service Transition** stage means the service has already been designed available for deployment. In this process, testing and validation of the product is complete.

**The Service Operation** simply means the product has been handed over to the customers for use. The customer at this stage is ready to use the product for personal services.

**The Continue Service Improvement** enable the service provider and service consumer to maintain an agreement on how to improve and the frequency of service improvement without distorting the business owner which is the customer.

**The end goal of every business organization is to satisfy the customer,** treat them as special, making sure the service provided is valuable and satisfactory. If company "A" provides customer care unit that attend to every queries and feedback from the customer, it will definitely do better than company "B" that have customer across a region without customer care unit to attend to their queries.

**The main goal of ITIL is to improve efficiency and achieve predictable service delivery** that ensures continuous customer satisfaction and confidence. Whatever business area you are in, customers are the king and they should be treated well.



## *ITIL Study*

**In the Full Course, You will learn everything you need to know about ITIL with Certificate to showcase your knowledge.**

**Duration: Study At Your Own Pace**

## *ITIL Course Outline*

ITIL Introduction/Overview  
ITIL Terminologies  
ITIL Service Basics  
ITIL Service Lifecycle  
ITIL Service Strategy Overview  
ITIL Service Strategy Roles  
ITIL Strategy Generation  
ITIL Service Portfolio Management  
ITIL Business Relationship Management  
ITIL Demand Management  
ITIL Financial Management  
ITIL Service Design Overview  
ITIL Service Catalogue Management  
ITIL Service Level management  
ITIL Capacity Management  
ITIL Availability Management  
ITIL Service Continuity Management  
ITIL Information Security Management  
ITIL Supplier Management  
ITIL Service Transition Overview  
ITIL Project Management  
ITIL Change Management  
ITIL Assets & Configuration Management  
ITIL Release & Deployment Management  
ITIL Validation and Testing  
ITIL Knowledge Management  
ITIL Service Operation Overview  
ITIL Event Management  
ITIL Incident and Request  
ITIL Problem Management





# BISMARCK

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Every Life, Every Moment, Every Day. A New Discovery...

**LAPTOP ENGINEERING COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Laptop Engineering?*

**Laptop Engineering** is a branch of computer engineering that incorporates computing science and electronic engineering for the development of a portable personal computer model from manufacturing to repairs and maintenance.

**Laptop Engineering** can also be defined as the study of the various components of a laptop, including how to troubleshoot and diagnose them and to properly repair any faults that may be found.

## *What is a Laptop?*

A **Laptop** is a portable personal computer that can be easily carried to any location while in use. It is popularly known as portable personal computer. It can as well run the same set of softwares and applications that are being run on a desktop computer.

**Laptops** was first invented by British designer - Bill Moggridge.

## *Components of a Laptop*

**A Laptop majorly consists of:**

1. In-built Monitor,
2. In-built Keyboard,
3. Motherboard,
4. Touch pad,
5. In-built Speakers,
6. Rechargeable Battery,
7. Wi-Fi Sensor,
8. Bluetooth Sensors etc.



## *Features and Benefits of Laptops*

1. Lightweight
2. Mobility
3. Finished Product
4. Easy Access
5. Highly Portable
6. Keeps Up-to-Date
7. Lower Power Consumption

## *Basic Tools Used in Laptop Engineering*

**Some of the Basic tools being used in Laptop Engineering** especially in the area of Repairs and Maintenance includes the following:

1. Phillips Head Screwdriver
2. Star tipped Screw driver
3. Toothbrush
4. Mini pliers
5. Scissors
6. Electrical tape
7. Shrink Wrap tubing
8. Copper foil tape
9. Adjustable pliers
10. Liquid flux
11. Solder
12. Multi-meter to mention but a few



# *The Common Parts Of a Laptop*

It is necessary to be familiar with the various parts of an average Laptop, in doing this, one will be able to quickly discern the affected part during repairs. The Common Parts includes:

1. Palm rest
2. Keyboard
3. Display screen
4. CCFL Bulb
5. Display Cable
6. Mous
7. Media strip
8. Optical Drive
9. Hard drive
10. Wifi card
11. Ethernet card
12. Power Button
13. Hinge cover
14. Bottom Base
15. USB extension Board
16. DC Jack
17. Motherboard
18. RAM
19. Bluetooth
20. Webcam
21. VGA just to mention but a few



# *Assembling and Disassembling a Laptop*

**Assembling a Laptop** most times depend on the design and structure you are looking at, but briefly in general, you can follow these steps:

1. Get the Case
2. Install Motherboard
3. Install the Processor
4. Wire the wireless
5. Insert the video card
6. Set up the drive
7. Add memory chips
8. Insert Power battery
9. Replace Screws and Coupling.
10. Installation of OS or Formatting

**In Disassembling a Laptop**, all screws are first removed starting from the rear screws under the battery and first removing the battery. After which the various parts are removed. It is important to note that some of the parts may be tricky when removing them and so carefulness should be observed in opening each parts.

**In the Full Course**, you will learn everything you need to know about **Laptop Engineering**, from cloning to fixes, repairs and maintenance, you will fully understand the structure and architecture of a Laptop, you will become a competent **Laptop Engineer** with **Certificate** to showcase your competence, upon successful completion of the exams.





## *Laptop Engineering Course Outline*

- Laptop Engineering - Basic Troubleshooting Used By A Laptop Technician
- Laptop Engineering - Common Parts And Functions Of The Average Laptop
- Laptop Engineering - Installing Operating Systems On Laptops And Netbooks
- Laptop Engineering - Complete Disassembly / Taking Apart The Laptop
- Laptop Engineering - Laptop Screen Disassembly
- Laptop Engineering - Laptop Screen Types and Repair Methods
- Laptop Engineering - Laptop Not Powering On Issues & Resolutions
- Laptop Engineering - Laptop Not Powering On Issues & Resolutions (Video Related)
- Laptop Engineering - Laptop Not Powering On Issues & Resolutions (Motherboard Issues)
- Laptop Engineering - Motherboard Repairs
- Laptop Engineering - The Soldering Process
- Laptop Engineering - Video Lectures
- Laptop Engineering - Exams and Certification





# BISMARCK

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**LINUX COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Linux?*

**Linux** is an open source operating system based on the Linux Kernel. An operating system manages all of the hardware resources associated with your computer or manages the communication between your software and your hardware. Linux is a family of the UNIX-like operating system.

**Linux** was created by Linus Torvalds in 1991 who made it open source, thus providing the opportunity for people to modify it to their own specification thereby increasing its scalability.

**Linux is usually built and packaged in a Linux distribution (or distro for short).** Linux Distributions has the Linux Kernel and supporting system software and libraries, many of which are provided by the GNU Project.

## *Linux Distributions*

**The most popular Linux distributions are:**

1. Ubuntu Linux
2. Linux Mint
3. Arch Linux
4. Deepin
5. Fedora
6. Debian
7. openSUSE
8. CentOS



# *Linux Components*

**The components of Linux are as follows:**

**Bootloader:** This manages the boot process of your computer. It usually has a splash screen that pops up and eventually goes away to boot into the operating system.

**Kernel:** This is the main component of the OS called “Linux”. The kernel is the core component of the system and manages the CPU, memory, and peripheral devices. The Linux kernel is the “lowest” level of the Linux Operating System.

**Daemons:** Daemons are primarily background services (such as printing, sound, scheduling, etc) that either startup during boot, or after you log into the computer.

**Shell:** This is a command process that allows you to control the computer via commands typed into a text interface usually called Terminal or Command Line Interface.

**Graphical Server:** It is the sub-system that shows the graphics on your monitor. It is usually called the X server or just “X”.

**Desktop Environment:** This is the piece of the User Interface that the users actually interact with. There are tons of desktop environments to select from (GNOME, Cinnamon, Unity, Enlightenment, XFCE, KDE, etc).

**Applications:** Linux offers massive various high-quality software that can be easily found and installed. The most popular and modern Linux distributions usually come with App Store-like tools that centralize and simplify application installation. For instance, Ubuntu Linux comes with Ubuntu Software that works the same way as Windows Store or App Store



## *Why Use Linux?*

**The following are reasons to use Linux:**

**Open Source:** Linux is a complete Open Source project and that removes away the cost of a license of the operating system. You can have a look at the source code of a Linux OS as it falls under the FOSS category (Free and Open Source Software).

**Security:** Using Linux on your system is the easiest way to avoid viruses and malware. The steps and methods of package management, the idea of repositories, and a couple more features makes it possible for Linux to be more secure than Windows. Linux programs can't make any changes to the system settings and configuration unless the user is logged in as the root (same thing as the administrator user in Windows) user.

**Stability:** The Linux operating system is very stable and is not prone to crashes and failures. The Linux operating systems usually runs accurately as fast as it did when first installed, even after several years of usage. The uptime for the Linux operating system is very high and the availability percentage is around 99.9 percent.

**Perfect For Programmers:** Its the best operating system for developers and programmers. Linux supports almost all of the major programming languages (Python, C/C++, Node, Java, Perl, Ruby, etc.). Furthermore, it provides a vast range of applications useful for programming purposes.

**Hardware Compatibility:** Linux runs on a range of hardware, right from servers, laptop, mobile to smartwatches. Linux makes use of the system resources very efficiently. Linux installation can be customized for specific users and for specific hardware requirements. It is compatible with most hardware and lower PC ends.

**Free:** Linux is absolutely free and users do not need to pay any dime to use it. All the basic software needed by a normal user and even an advanced user are available for free with no license fee.



## *Advantages Of Learning Linux*

1. It provided practical experience to the usage of commands that manage the activities /processes a user majorly engage in.
2. It introduced shell scripting applicability and other complementary tools to ease its functionality.
3. It also explained the importance of shell scripting as a skill for a Linux system administrator.
4. It taught in depth the management of a system administrator handling of Linux operating system.
5. It provides an unbiased analysis of its different distributions and also an understanding of the various components of each distribution to ease making a choice of which to use.

## *Linux Course Outline*

- Linux - Introduction
- Linux - Installation
- Linux - The Big Switch
- Linux - Terminal V/s GUI
- Linux - Imp Commands
- Linux - File Permissions
- Linux - Redirection
- Linux - Pipes , Grep & Sort
- Linux - Regular Expressions
- Linux - Environment Variables
- Linux - Communications
- Linux - Video Lectures
- Linux - Exams and Certification





# **BISMARCK**

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Every Life, Every Moment, Every Day. A New Discovery...

## **MANAGEMENT INFORMATION SYSTEM - MIS COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is MIS?*

**MIS** is an abbreviation for Management Information System.

## *What is Management Information System?*

**MIS - Management Information System is defined** as a computer-based coherent arrangement of information aiding the management function and decision making of an organization.

**Management Information System is an important aspect of every business** in that it provides business owners and managers with the necessary data needed for smart decision making that drives growth. MIS helps to keep background data, current data, and trend analysis so as to have ready information on all areas of the business. Every smart business owner or manager also uses MIS to get detailed data on the company environment and finances in order to improve business performance in both the short and long-term.





# *Components of Management Information System*

**1. Hardware:** The hardware components include various input and output devices that help in transmitting data and displaying the information when needed. These input devices include the keyboard, scanners, and mouse. The output devices may be the monitor, printer, network devices, and so on.

**2. Software:** These are computer programs that are designed to do a specific task. For eg, MS Office, Banking Software's, Railway's applications, etc are different kinds of software available to process the data/information in an organization.

**3. Procedures:** These procedures may vary from one organization to another. They are sets of rules or guidelines that an organization establishes for the use of a computer-based information system. It may also vary from one department to another as per the requirement. For example, working in the production department is different from working in the sales department. The production department requires information regarding the raw material or quantity of goods to be produced. The department sets its procedures in such a way that the MIS system helps in retrieving the information required by the department.

**4. People:** These are the people who utilize MIS. They are computer professionals who operate MIS for data processing to achieve organizational goals like planning and decision-making.



# *Features of Management Information System*

**A Key part of a Management's responsibility** is preparing forecasts for strategic planning and budgets. Management Information Systems can contain past data for fundamental business functions such as sales, production customer service, expenses and investments, information on revenue, etc.

**Management Information Systems (MIS) is a business pillar field.** Modern businesses can't survive without using some sort of MIS to collect and manage massive amounts of data, and there are plenty of opportunities to study or work in the discipline.

**Flexible:** An MIS should allow you to analyze and evaluate data from multiple sources as needed and in multiple ways depending on your needs.

**Easy to use:** Managers shouldn't need advanced knowledge of information systems in order to get what they need. Using the MIS should not be time-intensive, and the reports it generates should not overload a manager with too much information.

**Versatile:** MIS should be able to support different skills and knowledge.

**Collaborative:** MIS should facilitate communication between managers and staff throughout a company.

**MIS can be classified into two major sections:** Classification by Characteristic and Classification by Application.

**Under Classification by Characteristic, we have:**

1. Strategic Information
2. Tactical Information
3. Operational Information

**Under Classification by Application, we have:**

1. Planning Information
2. Control Information
3. Knowledge Information
4. Organizational Information
5. Functional/Operational Information
6. Database Information



# *Advantages of Management Information System*

1. It helps to manage data and flow of information
2. It improves data quality
3. MIS gives business owners the ability to collect, process and interpret data for growth
4. MIS helps you overcome performance challenges to derive better results.
5. It improves quality and effective decision making.
6. It reveals more data about customers, in order to improve customer satisfaction.
7. It helps in understanding and managing staff performance
8. There are plenty of job opportunities in the discipline
9. It helps to foresee and predict future occurrence for better business control

**In the Full course, you will learn everything you need to know** about the Management Information System. You will clearly understand how MIS works for business decision making, as well as management and growth. You will be a competent manager in any field with a **Certification** to showcase your knowledge and competence.



# *Management Information System Course Outline*

- Management Information System - Basic Concepts
- Management Information System - System Concepts
- Management Information System - M.I.S and I.T
- Management Information System - System Development Life Cycle (SDLC)
- Management Information System - Development Process (MISDP)
- Management Information System - Managing Data Resources
- Management Information System - Enterprise Resource Planning (ERP)
- Management Information System - End User Computing (EUC)
- Management Information System - Networks and Telecommunications
- Management Information System - Transaction Processing System
- Management Information System - Decision Support System
- Management Information System - Operational Information Systems
- Management Information System - Computer Security
- Management Information System - Video Lectures
- Management Information System - Exams and Certification





# BISMARCK

TECHNOLOGY & LEARNING INSTITUTION LIMITED

Every Life, Every Moment, Every Day. A New Discovery...

**MICROFABRICATION TECHNOLOGY COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Microfabrication?*

**Microfabrication** is a technique that makes use of semiconductor manufacturing processes such as ion etching, oxidation, diffusion and sputtering in combination with highly specialized micromachining techniques for faster and efficient production.

**This machining occurs in the range of 1-100 micrometers in different sizes**, where both the mechanical parts and the electronics that control them are built into the same piece of silicon material.

**Micro-Electromechanical System - MEMS** is a miniature machine which is also a part of Microfabrication that has both mechanical and electronic components. The physical dimension of a MEMS can range from several millimeters to less than one micrometer, a dimension many times smaller than the width of a human hair.

**MEMS Fabrication** are made up in the application of the following steps, normally several times during the manufacturing. The process starts with a polished silicon the substrate wafer that goes through these steps such as:

Doping,

Micromachining,

Thin film growth or Deposition,

Lithography and

Etching.

**Mems Fabrication is the way of fabricating** smaller structures of several micrometre scales and much smaller. Historically, the earliest microfabrication processes that are used for integrated circuit fabrication, also known as "semiconductor manufacturing" or "semiconductor device fabrication".

**Microfabrication Technologies** are primarily made from the micro-electronics industry, and the devices are made on silicon wafers even though glass, plastics and many other substrates are also used in the process.

**Micromachining**, semiconductor processing, semiconductor fabrication, microelectronic fabrication, MEMS fabrication and integrated circuit technology are terms that are used instead of microfabrication, but microfabrication is the broad and general term for all.



## *Features Of Microfabrication*

**There are several features of Microfabrication, and some of them are:**

- 1. Patterning** It is often desirable to pattern a film into distinct features or to form openings (or vias) in some of the layers. These features are on the micrometer or nanometer scale and the patterning technology is what defines microfabrication.
- 2. Microforming** is a microfabrication method of microsystem or of microelectromechanical system (MEMS) "parts or structures with at least two dimensions that are in the submillimeter range.
- 3. LIGA:** a german acronym for Lithographie Galvanoformung Abformung is a process used to create high aspect ratio using x-rays or relatively low aspect ratio structures using UV rays the steps involves deposition of Thick resist layer (PMMA) onto metal surface.
- 4. Etching:** Etching is the removal of some portion of the thin film or substrate. The substrate is opened up to an etching (such as a plasma or acid) which would chemically or physically attack the film until it is removed.

## *Benefits of Microfabrication*

**There are several benefits of microfabrication, and some of them are;**

- 1.** Faster production time of fabrics.
- 2.** Patterning of fabrics are done in production of the fabric
- 3.** Lesser cost of production.
- 4.** Much safer than traditional fabrication methods





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**MICROPROCESSOR COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**



## *What is a Microprocessor?*

**A Microprocessor** is a computer processor that combines together the functions of a central processing unit into a single integrated circuit popularly abbreviated as IC, or sometimes up to 8 integrated circuits.

**A Microprocessor** is also defined as multipurpose, register-based, clock-driven, digital integrated circuit that takes in binary data as its input, processes it according to the instructions that are stored in its memory and gives out results (also in binary form) as its output. Microprocessors consist of both sequential digital logic and combinational logic. Microprocessors work on numbers and symbols that are represented in the binary number system.

**The integration of a whole CPU** -Central Processing Unit onto a single or a few integrated circuits greatly takes down the cost of the processing power. Integrated circuit processors are produced in very large quantities by highly automated metal-oxide-semiconductor (MOS) fabrication processes, this brings about a low price per each unit of it. Single-chip processors increase the reliability of Microprocessor because there are fewer electrical connections that could fail. As the designs of microprocessors improve, the cost of manufacturing a single chip (together with smaller components that are built on a semiconductor chip that is the same size) generally stays the same.

**Before microprocessors were developed**, small computers had been built by using racks of circuit boards with many small and medium-scale integrated circuits. Microprocessors join this together into one or a few large-scale ICs. Continued development increases in microprocessors capacity have since rendered other kinds of computers almost completely useless, with one or more microprocessors being found in every electronic device from the tiniest embedded systems, calculators, handheld mobile devices to the largest mainframes and supercomputers.



# *Components of a Microprocessor*

**1. Arithmetic And Logic Unit:** This performs math computations, such as subtraction, addition, division, and Boolean functions. Boolean functions are a type of logic used for circuit designs. The ALU also executes comparisons and logic testing. The processor transmits signals to the ALU, which interprets the instructions and performs the calculations.

**2. Registers:** Microprocessors have temporary data holding places called registers. These memory areas maintain data, such as computer instructions, storage addresses, characters, and other data. Some computer instructions may require the use of certain registers as part of a command.

**3. Control Unit:** This receives signals from the CPU, which instructs the control unit to move data from the microprocessor to the microprocessor. The control unit also directs the arithmetic and logic unit. Control units consist of multiple components, such as decoder, clock, and control logic circuits. Working together, these devices transmit signals to certain locations on the microprocessor.

**4. Buses:** Microprocessors have a system of buses, which move data. Buses refer to classifications of wiring that have specific tasks and functions. The data bus transfers data between the central processing unit and random access memory (RAM) -- the computer's primary memory. The control bus sends information necessary to coordinate and control multiple tasks. The address bus transmits the address between the CPU and the RAM for data being processed.

**5. Cache Memory:** Some advanced microprocessors have memory caches, which retain the last data used by the CPU. Memory caches speed up the computing process because the CPU does not have to go to the slower RAM to retrieve data. Many computers have level 1 or level 2 caches; some systems have level 3 caches. The cache level indicates the order in which the CPU checks for data, starting with level 1. Manufacturers often integrate level 2 and level 3 caches into the microprocessor, which enhances processing speed.



## *Applications of a Microprocessor*

1. The microprocessors are used in modems, telephone, digital telephone sets, and also in air reservation systems and railway reservation systems.
2. The microprocessor is used in the medical instruments to measure temperature and blood pressure.
3. It is also used in mobile phones and television.
4. It is used in calculators and game machines.
5. It is used in the accounting system and data acquisition system.
6. The microprocessor is used in personal computers (PCs).
7. The microprocessor is used in LASER printers for good speed and making automatic photocopies.
8. It is also used in traffic light control.



## *Features of a Microprocessor*

**Some of the features of Microprocessors that make them a fundamental tool in the design and development of electronic devices are:**

- 1. Cost-effective:** Microprocessor chips are easily available at very low prices because they are produced in large quantity and this results in a very low cost.
- 2. Size:** The microprocessor is a very small-sized chip, thereby, making it portable.
- 3. Low Power Consumption:** Microprocessors are produced by using metal-oxide-semiconductor technology, which has a very low power consumption.
- 4. Versatility:** The microprocessors are usages that are broad and versatile since we can use the same chip in a number of applications by configuring the software program.
- 5. Reliability:** The failure rate of an IC in microprocessors is very low, these features make it very reliable.



## *Benefits of a Microprocessor*

**There are lots of benefits and advantages of Microprocessors and some of them are:**

1. Microprocessors reduce the cost of operation, particularly fuel-saving by optimizing control strategies.
2. Reduce products give away through more uniform operations and lighten control enforcement.
3. Microprocessors improve the responsiveness to change in process, product specification and the addition of new products.
4. Microprocessors incorporate various strategies to minimize the product offset resulting from the failure of plant equipment or unanticipated process conditions and to improve plant safety
5. Microprocessors improve more timely information on the operations of plants and maintenance managers to let them keep a plant running longer and more efficiently.
6. Improve the integration of plant operations through co-ordinated control strategies.
7. It allows for the exchange of information with another plant for proper synchronization.



## *Why Study Microprocessor?*

**1. For Internet Of Things:** Also known as IoT, microprocessors can be used in embedded controllers, in traffic lights control and mainly as the heart of computers, know how the computer works, and how it stores data.

**2. For Job Security and Career Opportunities**

**3. Increase Your Earning Potential**

**4. For Career Advancement**





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**MICROWAVE ENGINEERING COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Microwave Engineering?*

**Microwave Engineering** refers to the study and design of Microwave circuits, systems and components. The fundamental principles of engineering are being applied to the analysis, design and measurement techniques in this sector. The short wavelengths that are involved make this discipline different from Electronic engineering. This is because there are various interactions that are happening within the circuits, transmissions and propagation characteristics at the various microwave frequencies.

**The term Microwave is used to identify any electromagnetic waves** that are above 103 megahertz (which is equals to 1 Gigahertz) up to 300 Gigahertz because of the short physical wavelengths of these frequencies. Short wavelength energy presents us with distinct advantages in many applications. For example, sufficient directivity can be gotten by using a relatively small antenna and low-power consumption transmitters. These individual characteristics are perfect for use in both military and civilian radar and communication technologies applications. Small antennas and other small features are made feasible by Microwave Frequency applications. The size advantage can be regarded as part of a solution to the various problems of space, or weight, or both of them.

**The use of Microwave Frequency is very important for the design of radar** that is found in shipboards because it makes possible for the detection of smaller targets. Microwave Frequencies offer special problems in the transmission, generation, and design of circuits that are not faced at lower frequencies. Conventional circuit theory is mostly dependant on voltages and currents while Microwave Theory is based on the fields of electromagnetic.

**Equipment and techniques may be described simply as "Microwave"** when the wavelengths of its signals are approximately the same as the dimensions of the equipment in such a way that the model of the lumped-element is inaccurate. As a result, the practical Microwave technique happens to move away from the discrete resistors, inductors, and capacitors, that are used together with lower frequency radio waves. Instead, the distributed-element model and transmission-line theory present more useful methods for design and analysis.





# *Applications Of Microwave Engineering*

**1. Communications And Remote Sensing:** Communications systems include satellite, radio, television, wireless phone, data transmission applications, and all combinations of these. Numerous special communications applications such as point-to-point communications have replaced the use of telephone lines in metropolitan regions where the lines are very expensive to install. The most well-known remote sensing systems are Radars, it provided the major incentive for the development of microwave technology because only this region of the spectrum could provide the required resolution with antennas of reasonable size. Another class of remote sensing is radiometry. Radiometric systems need no transmitter, they merely collect naturally-occurring electromagnetic energy and process its to form images.

**2. Electronic Warfare:** This is a military application of microwaves involving specialized broadband receivers and high-power jamming transmitters. The receivers are used to monitor the enemy's transmissions passively, primarily for intelligence purposes.

**3. Commercial Application:** This is the most familiar consumer application of microwave engineering, the application uses a minimum of sophisticated microwave circuitry but has revolutionized the technique for heating foods and other products without convectively heating their entire surroundings. Commercial applications of microwave technology include the front-end of much of the wireless stuff used every day, such as cell phones, pagers, wireless LANs, satellite television, XM Radio, and that cool GPS playtoy

**4. Basic Research And Science Application:** Atomic clocks use microwave resonance interactions with either ammonia or cesium molecules to provide extremely stable oscillating frequencies.



## *Features Of Microwave Engineering*

**The following are the main features of Microwave Engineering:**

1. Microwaves are the generally electromagnetic waves that radiate electromagnetic energy with a shorter wavelength.
2. Microwaves are not reflected by the Ionosphere.
3. Microwaves signals travel in a straight line and are reflected by surfaces.
4. Microwaves are easily reduced within shorter distances.
5. Microwave currents can easily flow through a very thin layer of a cable.

## *Benefits Of Microwave Engineering*

**There are many advantages of Microwave Engineering and some of them are:**

1. They support much larger bandwidth transfer and therefore, more information is transmitted through it. For this reason, Microwaves are used for point-to-point communications eg radar.
2. More gain in the antenna is possible.
3. Higher data transfer rates are transmitted as the bandwidth is much more.
4. The size of the antennas gets reduced, as the frequencies are much higher.
5. Low power consumption as the signals are of higher frequencies.
6. The effect of fading gets noticeably reduced by using the line of sight propagation.
7. It provides an effective reflection area in the systems used in radar.
8. Satellite and terrestrial communications with very high capacities and capabilities are made possible with Microwave Engineering.
9. Low-cost miniature microwave features and components can be developed.



## *Why Study Microwave Engineering?*

1. RF and microwave engineering helps to make many aspects of our day-to-day lives possible, from mobile phones and Wi-Fi to radios and radar systems.
2. High demand for skilled radio frequency (RF) and microwave engineers in the communications, space, aerospace, automotive industries, among others.
3. Go in-depth into wireless communications, space technology, and advanced gigahertz and terahertz microwave technologies.
4. Job opportunities and career advancement.

## *Microwave Engineering Course Outline*

- Microwave Engineering - Electromagnetic Theory
- Microwave Engineering - Transmission Line Theory
- Microwave Engineering - Transmission Lines And Waveguides
- Microwave Engineering - Microwave Network Analysis
- Microwave Engineering - Impedance Matching And Tuning
- Microwave Engineering - Microwave Resonators
- Microwave Engineering - Power Dividers And Directional Couplers
- Microwave Engineering - Microwave Filters
- Microwave Engineering - Theory And Design Of Ferrimagnetic Components
- Microwave Engineering - Noise And Nonlinear Distortion
- Microwave Engineering - Active Rf And Microwave Devices
- Microwave Engineering - Microwave Amplifier Design
- Microwave Engineering - Oscillators And Mixers
- Microwave Engineering - Introduction To Microwave Systems
- Microwave Engineering - Video Lectures
- Microwave Engineering - Exams And Certification





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Every Life, Every Moment, Every Day. A New Discovery...

**MINERAL PROCESSING TECHNOLOGY COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Mineral Processing Technology?*

**Mineral Processing Technology** is the technological processing of Ore Treatment and Mineral Recovery.

**Mineral Processing** depends on the particle behavior, which varies with its size. Size analysis is of great significance to determine the quality of grind and establish the degree of liberation of valuable minerals between them, as well as from the gangue at various particle sizes.

**Sizing** is the general expression of the separation of particles. The simplest form of sizing process is screening, which is passing the particles to be sized through a sieve or series of sieves.

## *What are Minerals?*

**Minerals** are earthly useful inorganic raw materials found in the crust of the earth and as seabed deposits.

## *Features Of Mineral Processing*

**Mineral processing consists of:**

1. Preparation and liberation of the valuable minerals from waste minerals.
2. Separation: These values into two or more products, called concentrates. The term separation, in this case, is synonymous with concentration.



## *Benefits Of Mineral Processing*

1. Mineral processing protects against the waste of resources, Ore is an aggregate of economically important minerals from which a valuable metallic constituent can be profitably mined and extracted. Most of the rock deposits contain metals or minerals. When the concentration of valuable minerals or metals is too low to justify for mining, it is considered to be a waste or gangue material. Within an Ore body, the valuable minerals are surrounded by gangue minerals. It is necessary to liberate and concentrate those valuable minerals from the bulk mass through a suitable mechanical treatment.
2. Mineral processing leads to less energy consumption, Processed minerals when processed by leaching or smelting
3. Mineral Processing helps separate impurities if an ore contains more than one valuable mineral objective of mineral processing.
4. Compared to the chemical method of processing physical method consumes less amount of energy.
5. Mineral processing reduces not only reduces the smelters' energy cost but also the smelters' metal loss due to less metal bearing slag.
6. Save freight costs since we don't have to transport the rejected materials.

**In the Full course, you will learn everything you need to know about Mineral Processing Technology with Certification of Completion to showcase your knowledge.**



# *Mineral Processing Technology Course Outline*

- Mineral Processing Technology - Introduction
- Mineral Processing Technology - Ore handling
- Mineral Processing Technology - Metallurgical accounting, control and simulation
- Mineral Processing Technology - Particle size analysis
- Mineral Processing Technology - Comminution
- Mineral Processing Technology - Crushers
- Mineral Processing Technology - Grinding mills
- Mineral Processing Technology - Industrial screening
- Mineral Processing Technology - Classification
- Mineral Processing Technology - Gravity concentration
- Mineral Processing Technology - Dense medium separation (DMS)
- Mineral Processing Technology - Froth flotation
- Mineral Processing Technology - Magnetic and electrical separation
- Mineral Processing Technology - Ore sorting
- Mineral Processing Technology - Dewatering
- Mineral Processing Technology - Tailings disposal
- Mineral Processing Technology - Video Lectures
- Mineral Processing Technology - Exams and Certification





# BISMARCK

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**MOBILE COMPUTING COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**



# *What is Mobile Computing?*

**Mobile Computing** is the transmission of data, voice and video via a computing system without having to be connected to a fixed physical link or location.

**Mobile Computing comprises of:**

1. Mobile Hardware,
2. Mobile Communication and
3. Mobile Software.

**Mobile Hardware** involves mobile devices or device components.

**Mobile Communication** involves impromptu networks and infrastructure networks, communication properties, communication protocols, including different formats of data.

**Mobile Software** refers to the features and design of mobile applications.



## *Mobile Computing Concepts*

**In our present-day computing world**, several different technologies have come up. They have grown to harbor existing computer networks all around the world. With Mobile Computing, we find out that the need to be close to someone's physical location to be able to communicate has been eradicated. We hear of words such as telecommunication, which refers to people being able to work from home or the field but also at the same time have access to work resources as if they are in the office.

**The main essence of Mobile Computing** is that it gives one the ability to work from any location. The use of smartphones, iPods, tablets, notebooks, and smartphones, have increased the demand for these devices. Present-day workers have access to devices that allow them to carry out their work from the confines of their own location.

**These mobile devices are built to access and store** very large amounts of important data. Executive and top management could take decisions based on already generated information without going to the office. For example, sales reports and market forecasts can be gotten through these devices or you can have a meeting via video or audio conferencing through these devices. With such features being very high in demand, manufacturers are constantly coming up with applications built to support different services in terms of Mobile Computing.



## *Components of Mobile Computing*

**1. Mobile Communication:** These are the infrastructure put in place to ensure that seamless and reliable communication takes place. It includes devices such as protocols, services, bandwidth, and portals necessary to facilitate and support the stated services.

**2. Mobile Hardware:** This includes mobile devices or device components that receive or access the service of mobility. They would range from portable laptops, smartphones, Tablet PCs, Personal Digital Assistants. Above mentioned devices use an existing and established network to operate on. In most cases, it would be a wireless network.

**3. Mobile software:** This refers to the actual program that runs on mobile hardware. It is the operating system of the appliance. It is also an essential component that operates the mobile device.

## *How Mobile Computing Works*

**Mobile Computing** often starts with actual hardware inside a device, using microprocessors and memory chips for data storage, radiofrequency element handles power sourcing, this sends and receives signals over a wireless network.

**Modern Smartphones** are a lot like computers, with modern mobile computing, data is also often delivered onto the Internet via the service provider's telecom network. This hybrid system of communication is part of what aids mobile computing, users can access individual websites over their smartphones and on any device.



# *Features and Benefits Of Mobile Computing*

## **Some of the Features Of Mobile Computing include:**

- 1. Portability:** Devices and nodes that are connected within the Mobile Computing system should facilitate mobility, i.e it should allow the user to move around with it. These devices might have limited device features and a limited supply of power, but they should have enough processing capability and physical portability to work in a movable condition.
- 2. Connectivity:** This makes up the quality of service of the network's connectivity. In a Mobile Computing system, the network availability is expected to be maintained at a very high level with a very minimal amount of lag or downtime without being affected by the mobility of the connected nodes.
- 3. Interactivity:** The nodes that belong to a Mobile Computing system are connected to one another to allow for communication and collaboration through active transactions of data.
- 4. Individuality:** A portable device or a mobile node that is connected to a Mobile network most time denotes an individual. A Mobile Computing system should be able to adopt the technology to cater to the individual needs and also to obtain contextual information of each node.
- 5. Availability of Pre-Integrated Apps:** Mobile apps have played a significant role in the adoption of smartphones, these apps perform different duties ranging from scheduling activities, reminders, and alerts, access to real-time information, etc.
- 6. Powerful Devices and Network:** With the emergence of smartphones and fast internet speed, get instant access to information for both personal use and the workplace.
- 7. Gain Competitive Advantage:** The use of mobile resources to interact with customers enables businesses and individuals to present themselves in a professional manner regardless of size, resources, or location.
- 8. Social Engagement:** keep in touch with anyone at any time all over the world.
- 9. Personalization:** You can customize your mobile computing needs to suit your personal needs.
- 10. Convenience:** If offers convenience such as the need to be close to someone's physical location to be able to communicate has been eradicated.



## *Advantages of Mobile Computing*

**There are many advantages of Mobile Computing, some of them are:**

1. Mobile Computing eliminates paperwork
2. Mobile Computing brings about productive output in a lesser amount of time
3. Cost reduction
4. Better decision making
5. Improved customer relations
6. Greater accuracy
7. Increased ROI
8. Saves Time
9. Enhanced Productivity
10. Location Flexibility.

## *Why Study Mobile Computing?*

1. Study the design, development, and evaluation of mobile applications.
2. Provide solutions to problems that can be solved with mobile computing.
3. Enhance your problem-solving skills and prove your expertise with potential employers and friends.
4. Stay relevant in your chosen field, mobile computing as a career would be very much in demand even in the future.
5. Understanding system communications and network procedure
6. Improve your earning potential.
7. Be assured of Job Security and better chances of getting shortlisted for an interview.



# *Mobile Computing Course Outline*

- Mobile Computing - Introduction
- Mobile Computing - The Parctab Ubiquitous Computing
- Mobile Computing - Scalable Support For Transparent Mobile Internetworking
- Mobile Computing - Location Management For Networks With Mobile Users
- Mobile Computing - Dynamic Source Routing In Ad Hoc Wireless Networks
- Mobile Computing - Routing Over Multi-Hop Wireless Network Of Mobile Computers
- Mobile Computing - Improving The Performance Of Reliable Transport Protocols In Mobile Computing Environments
- Mobile Computing - Indirect Transport Layer Protocols For Mobile Wireless Environment
- Mobile Computing - Connecting Mobile Workstations To The Internet Over A Digital Cellular Telephone Network
- Mobile Computing - Asynchronous Video: Coordinated Video Coding And Transport For Heterogeneous Networks With Wireless Access
- Mobile Computing - Wireless Publishing: Issues And Solutions
- Mobile Computing - Broadcast Disks: Data Management For Asymmetric Communication Environments
- Mobile Computing - Application Design For Wireless Computing
- Mobile Computing - Mobisaic: An Information System For A Mobile Wireless Computing Environment
- Mobile Computing - Providing Location Information In A Ubiquitous Computing Environment
- Mobile Computing - Unix For Nomads: Making Unix Support Mobile Computing
- Mobile Computing - Scheduling For Reduced Cpu Energy
- Mobile Computing - Storage Alternatives For Mobile Computers
- Mobile Computing - Disconnected Operation In The Coda File System
- Mobile Computing - Experience With Disconnected Operation In A Mobile Computing Environment
- Mobile Computing - Mobility Support For Sales And Inventory Applications
- Mobile Computing - Strategies For Query Processing In Mobile Computing
- Mobile Computing - The Case For Wireless Overlay Networks
- Mobile Computing - The Diana Approach To Mobile Computing
- Mobile Computing - The CMU Mobile Computers And Their Application For Maintenance
- Mobile Computing - Genesis And Advanced Traveler Information Systems
- Mobile Computing - Video Lectures
- Mobile Computing - Exams and Certification





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Every Life, Every Moment, Every Day. A New Discovery...

**NETWORK THEORY COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What Is Network Theory?*

**Network Theory** is the study, methods and practice of solving problems in electric circuits or electric networks. Network Theory in academic terms is known as Network Analysis & Circuit Theory.

**The Study of Network Theory** help students understand the laws, concepts and methods that can be applied to specific electric circuits and networks.

**Network Theory** is the foundation for most of the courses in Electrical Engineering. We will take a look at the applications of Network Theory.

## *Applications Of Network Theory*

**Network Theory is used in many disciplines and fields which include:**

1. Statistical Physics,
2. Computer Science,
3. Particle Physics,
4. Biology,
5. Electrical Engineering,
6. Economics,
7. Finance,
8. Climatology,
9. Operations Research,
10. Ecology,
11. Public Health,
12. Sociology,
13. WWW - World Wide Web,
14. Logistical Networks,
15. Internet Networks,
16. Metabolic Networks,
17. Gene Regulatory Networks,
18. Social Networks,
19. Epistemological Networks.





# *Features Of Network Theory*

**Some of the Features Of Network Theory include:**

**1. Social Network Analysis:** Social Network analysis looks at the structure of relationships that is between social entities. These entities are mostly persons, but they may also be groups, organizations, states, nations, web sites, or scholarly publications. Since the early 1970s, the empirical study of Networks has been a major role in social science, and many of the mathematical and statistical tools that were used for studying and analyzing Networks have been first been designed and developed in sociology.

**2. Biological Network Analysis:** With the recent explosion of high throughput biological data that is publicly available, the study of molecular Networks has since gained very significant interest. The kind of analysis defined in this context is closely related to social network analysis, but mostly focusing on local patterns in the network. The analysis of biological networks with respect to diseases has brought about the development of the field of Network medicine.

**3. Narrative Network Analysis:** The automatic parsing of textual corpora has brought up the extraction of actors and their relational networks with its various applications on a vast scale. The resulting narrative Networks, which may contain thousands of nodes, are then studied and analyzed by making use of tools from Network Theory to find out the key actors, the key communities or parties, and their general properties such as the robustness or structural stability of the overall network, or to find out the centrality of certain nodes.

**4. Link Analysis:** Link analysis is a subset of network analysis, that is aimed at exploring the associations between objects. An example could be, looking through the addresses of suspects and victims, the telephone numbers that they have dialed and financial transactions that they have carried out during a given timeframe, and the familial relationships between these subjects as a part of the police investigation.



## *Why Study Network Theory?*

### **Some of the Benefits of Studying Network Theory include:**

1. The study of Network Theory brings about connectivity, communication and sharing.
2. It is also used in finding an address, mapping and getting contact information.
3. The study of Network Theory brought about services such as bans, bill payment and online shopping.
4. Network Theory is the foundation of IOT (Internet Of Things).
5. Become a Certified Network Theory Engineer.
6. Become a Senior Engineer commanding high pay.
7. Job Opportunities and Career Advancement.

## *Network Theory Course Outline*

Network Theory - Introduction/Overview  
Network Theory - Example Problems  
Network Theory - Active Elements  
Network Theory - Passive Elements  
Network Theory - Kirchhoff's Laws  
Network Theory - Electrical Quantity Division Principles  
Network Theory - Nodal Analysis  
Network Theory - Mesh Analysis  
Network Theory - Equivalent Circuits  
Network Theory - Equivalent Circuits Example Problem  
Network Theory - Delta to Star Conversion  
Network Theory - Star to Delta Conversion  
Network Theory - Network Topology  
Network Theory - Network Topology Matrices  
Network Theory - Superposition Theorem  
Network Theory - Thevenin's Theorem  
Network Theory - Norton's Theorem  
Network Theory - Maximum Power Transfer Theorem  
Network Theory - Response of DC Circuits  
Network Theory - Response of AC Circuits  
Network Theory - Series Resonance  
Network Theory - Parallel Resonance  
Network Theory - Coupled Circuits  
Network Theory - Two-Port Networks  
Network Theory - Two-Port Parameter Conversions  
Network Theory - Filters  
Network Theory - Video Lectures  
Network Theory - Exams and Certification





# BISMARCK

TECHNOLOGY & LEARNING INSTITUTION LIMITED

Every Life, Every Moment, Every Day. A New Discovery...

**ONLINE PUBLISHING & BLOGGING COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Online Publishing and Blogging?*

**Online Publishing and Blogging** refers to the process of publishing content and articles regularly on an online webpage known as **Web-Log** (shortened to **Blog**).

A **Blog** is an online journal or informational website whose main focus is to display informational articles in the reverse chronological order, with latest posts appearing first. It is a platform where a writer or a group of writers share their views on various subjects, issues and trending topics.

**Posting your updates on social networking websites like Facebook and Twitter** is basically not considered as Online Publishing. Instead, Online Publishing refers to uploading content professionally to unique webpages or websites.

**The whole process of Online Blogging and Publishing contents online involves:** Designing, coding the site to life, Pushing it to a web server and then Updating content regularly on the webpages with a CMS. Online Publishing and Blogging is made up of personal sites, business sites, and community websites in addition to e-books and mini-blogs.

**The content that is meant for Online Publishing may include:** text, gifs, videos, digital images, artworks, and other forms of media. Bloggers must have a web server, a web publishing software, and an Internet connection to carry out Online Publishing. Online Publishing is also known as **Web Publishing**.

**Since Online Publishing and Blogging does not need physical materials** such as ink and paper, It cost almost nothing to publish content on the web. Therefore anyone with a web-server, CMS Software, and an internet connection can be a Web Publisher or Online Publisher.

**Also, the audience is limitless** since the content posted on the web can be viewed by practically anyone that has a device and internet connection. These advantages of web publishing has have led to a new era of Online Publishing that was never possible before.



# *Features of Online Publishing and Blogging*

**There are many Features Of Online Publishing. Below are some of the features of an Online Publishing and Blogging.**

**1. Web Server:** A Web server is a Software Program that makes use of HTTP (Hypertext Transfer Protocol) to serve the files that form Web Pages to users, in response to the requests made from the user browser, which are forwarded by the user's computers' HTTP clients. Without a Web Server, the digital content would not be available to users on the world wide web (WWW).

**2. Domain Name:** A Domain name is simply your website name. A domain name is the address where users can access your website over the internet. A Domain name is used for locating computers that are connected on the internet. Computers make use of IP addresses for locating resources on the internet, which is a series of number, But it is difficult for we humans to remember a string of numbers, therefore domain names were developed and used to identify computers on the internet rather than using IP addresses.

**3. CMS:** A CMS which is the short form of Content Management System is a software application or set of related programs that are used to create and manage digital content on the web. For Online Publishing and Blogging, you need a CMS to be able to regularly update content on your site, because without CMS, you would have to manually be editing the HTML content of your site to create the structure of the post. Using a CMS solves the issue by allowing you to focus on just the text and it offers you tools that help to format your content.

**4. Content Creator:** A content creator is popularly known as a **Writer**. A writer is in charge of creating readable and understandable articles to suit the audience needs. He also has the responsibility of posting the created content or articles professionally on webpages with the help of a CMS.



# *Advantages Of Online Publishing and Blogging*

**The benefits are enormous, some of which are:**

- 1. Gain Influence:** Producing good content attracts visitors who keeps coming back to your site, why? Because you have gained their trust and they see value.
- 2. Gain more insights about your followers:** Blogging and Publishing online is an easy and effective way to obtain information on what consumers want, or dislike and companies are ready to pay for this information.
- 3. Learn SEO tricks:** Publishing good content online is a prerequisite in order to be noticed online. Create good quality content that visitors are interested in sharing and the big corps like Google is bound to take notice.
- 4. Opens up opportunities:** A constant stream of visits to your blog will also increase the potential to attract interest from prospects.
- 5. Educate and help others:** A good blog can educate, inspire and help readers in ways the blogger may never know.
- 6. Serves as a feedback mechanism:** Get instant feedback from visitors, via comments upvotes and downvotes. This ensures that at every point in time you know what content to put out there for your readers.
- 7. Be perceived as an expert in your field:** This takes time and effort, and won't happen in the twinkle of an eye, through consistency and good blogging, visitors to your blog would perceive you as an expert.
- 8. Low Cost of Publishing and Running:** Compare to traditional publishing, online publishing is cost effective to run.
- 9. Broader Audience:** Blogging and Publishing contents online makes you have a broader audience for your content.
- 10. Publishing Contents Online reduces the time it takes** to create content because you have a broad number of tools and resources to make and edit the content and in just one click, your post is visible to all your audience.
- 11. It offers higher return on investment** for publishers and newspaper organizations.



## *Why Study Online Publishing and Blogging?*

- 1. Get rewarded:** Online publishing and blogging attract rewards such as online popularity, connections and networking, publishing content takes a lot of courage and with time attracts a lot of rewards.
- 2. Streamlines your thoughts:** Having to organize your ideas and insights into structured content is regarded as an art, doing this everyday makes you a master.
- 3. Enhances Growth:** Persistent online publishing and blogging enhances brand growth and is a journey towards self discovery.
- 4. Reach a wide audience:** Online publishing and blogging is not restricted by border or geographical locations, takes only a matter of minutes for content to be seen all over the world.
- 5. Increase Your Earning Potential:** Online publishing can be a very lucrative business, venturing in this field with the right tools, consistency and focus, you are on your way to increasing your earning potential either on full-time or on part-time basis.
- 6. Career Advancement:** Online publishing course and certification can land you both office and remote jobs giving you an edge in your career.

## *Online Publishing and Blogging Study*

**In the Full Course, you will learn everything you need to know about Online Publishing and Blogging with Diploma Certification** to showcase your knowledge and competence.

**Format:** Web & Video Lectures.

**Prerequisite:** No Prerequisite.



# *Online Publishing and Blogging Course Outline*

- Online Publishing and Blogging - Introduction
- Online Publishing and Blogging - Subscribing to Blogs
- Online Publishing and Blogging - Developing Your Blog
- Online Publishing and Blogging - Choosing a Blog Service
- Online Publishing and Blogging - Writing and Promoting Your Blog
- Online Publishing and Blogging - Copyright and Fair Use
- Online Publishing and Blogging - How to Start a Blog
- Online Publishing and Blogging - Learn How to Use WordPress
- Online Publishing and Blogging - How to Write and Create Great Blog Content
- Online Publishing and Blogging - How to Promote your Blog and Its Content
- Online Publishing and Blogging - How to Make Money From Your Blog
- Online Publishing and Blogging - Blogging Tools and Resources
- Online Publishing and Blogging - Video Lectures
- Online Publishing and Blogging - Exams and Certification







# BISMARCK

**TECHNOLOGY & LEARNING INSTITUTION LIMITED**

Every Life, Every Moment, Every Day. A New Discovery...

**ONLINE COPYWRITING COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Online Copywriting?*

**Online Copywriting** is the art or process of writing advertisement and promotional content particularly for increasing brand awareness and sales.

**Copywriters** are individuals who are responsible for the text that you see on brochures, websites, billboards, emails, advertisements, web catalogs, and others.

**Unlike regular news or editorial writing, copywriting** is all about getting the reader to take action in what you wrote about. That action might be to purchase a product, opt-in, or engage with a product, service, or company. That is why a copywriter is often referred to as “a salesman in print section.”

**Copywriting should not be confused with the term “copyright.”** Copyright means that an individual or a company has the exclusive legal right to publish, reproduce, sell, or distribute another persons work (such as music, books, artistic items). The purpose of a copyright is to protect a material and prevent illegal use of the material by agents that are unauthorized.



# Features Of Copywriting

Here are some defined characteristics of great copywriting that content creators of all areas can emulate:

**1. Structured:** Brilliant copywriters know what they want to say and how to get it down on the page in a logical sequence. Their words would make it a clear point right from the get-go and use an introductory paragraph to hint at what is coming to them.

**2. Purposeful:** Before starting a writing task, all top copywriters ask, “where will this copy go and what does it need to achieve?” By understanding the purpose of the writing, the copywriter can also ask the right questions, to get the most interesting and relevant information to write about.

**3. Chameleon-like:** As well as ensuring the words on the page are suitable for the format, the best writers meld their language into the company’s style. Even when working inside your house, different writers might be asked to produce separate sections of a website or sections of a brochure, and a savvy copywriter would always check the overall tone, and make sure that what they are writing fits and achieves consistency across the board.

**4. Accessible:** To better connect with the reader, a writer should directly address his or her audience and write in a conversational style. Gauging how formal or informal to be is important. Complex jargon should be avoided to maximize comprehension, but excessive dumbing things down can be patronizing.

**5. Original:** To make sure they’re writing something original about your company, a quality copywriter will first check out how competitors describe themselves and put all those words into a banned list. Then they’ll think about your company’s ‘unique value proposition or how it does things differently rather than how to say the same thing in a different way.

**6. SEO Optimized:** A writer who is writing for brand awareness or product promotions must be able to research on related keywords that are trending and make sure his writeups includes some of these keywords for visibility on search engines. Some of the tools used in suggesting trending keywords include: Google Trend and SEM Rush among others.



## *Benefits of Copywriting*

1. Save You and Your Employees Time
2. Present Quality Content to Your Audience
3. Eliminate Spelling Mistakes and Grammatical Errors
4. Generate Persuasive and Convincing Copy
5. Get Fresh Eyes on Your Industry
6. Enjoy Stress-Free Web Optimization
7. Increases Brand Awareness and Authenticity

## *Why Study Copywriting?*

1. Gain essential copywriting skills for online publishing, brand awareness, product sales and promotion.
2. Increase your earning potential as a writer.
3. Become a copywriting professional with good pay.
4. Job opportunities and career advancement.
5. Enrich your CV and attract better jobs.



# *Online Copywriting Course Outline*

Online Copywriting - Introduction

Online Copywriting - Harnessing the power of emotional copywriting to persuade your prospects

Online Copywriting - Three big ideas you should use before benefits

Online Copywriting - The Process for developing customer empathy

Online Copywriting - The Flattery that will get you everywhere

Online Copywriting - The Secret of emotionally engaging copy

Online Copywriting - Connecting on social media

Online Copywriting - The best way to ask for the order

Online Copywriting - Five pleasure-inducing techniques for copywriters

Online Copywriting - How to engage your imagination and free your creativity

Online Copywriting - Finding your voice (and that of others)

Online Copywriting - The definitive way to judge when grammar matters in copywriting

Online Copywriting - Methods of injecting life into your sales pitch

Online Copywriting - Video Lectures

Online Copywriting - Exams and Certification





# BISMARCK

TECHNOLOGY & LEARNING INSTITUTION LIMITED

Every Life, Every Moment, Every Day. A New Discovery...

**OPERATING SYSTEM COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Operating System?*

**Operating System** is the Multi-functional Computing Environment Software that manages computer hardware and software resources together to provide common services for computer programs and applications.

## *Functions of Operating System*

**The benefits and importance of operating system are numerous, some of which are:**

1. OS offers Computer Programs and Applications Execution
2. OS serves as a platform for Application programs operations
3. OS manages the computer Input-Output unit
4. OS comes with consistent user interface
5. OS offers multitasking
6. It offers device management
7. It offers buffering
8. It offers Spooling (Simultaneous Peripheral Operation on Line)
9. It offers memory management
10. It offers partitioning
11. It offers virtual memory processing
12. File Management etc.

## *Types of Operating System includes*

**The most popular operating systems are as follows:**

1. Mac OS X.
2. Linux.
3. Windows.
4. Android (based on Linux)
5. iOS.



# Operating System Installation

**Installation of OS or Operating System** is simply the setup of Operating System Environment on a Computer. Without the OS Environment, a computer remains in its BIOS state and has limited functions. It cannot offer the many software applications that we need to solve our daily personal and business problems, this is because these software applications rely solely on OS to function.

**One of the various ways to start the installation of Operating System on a computer includes:**

1. Put the OS installation CD/DVD into the Optical Drive after which the F Keys can be used, such as F12 or F11 to tell the laptop to boot from CD/DVD.
2. It is possible that some laptop default BIOS splash startup screen settings shows you briefly the F Key to press to boot from CD, if not, you can turn off the Computer and put it back on and then try a different F Key until you finally find the particular F Key that takes you to the Boot menu choice screen.
3. Alternatively, you can start the OS install by going into your BIOS Setup screen (usually pressing F2 key immediately laptop is switched on, or ESC Key where you can then choose to set the CD/DVD as the laptops first boot choice.
4. If Per-adventure you can not get the laptop to boot from the CD, a different CD/DVD or ROM can be used and if the situation persist then you will need to troubleshoot hardware connections or check cable connections.  
**Note:** XP installation will be different from Windows 7 install. Windows XP has lesser or lower graphics compare to Windows 7 and will ask you more questions than Windows 7 will. In a Windows 7 install, you will start by choosing Custom installation.
5. Here, you will also need to choose what operating system you are installing (if using a multi install) CD, and you will choose what kernel the OS will run, whether you will be using a 32 Bit OS or a 64 Bit OS. A 64 bit OS is developed for today's Dual Core CPUs processes and for Laptops with more than 3 Gigs of RAM.
6. If you find that you are installing the operating system and it seems to stop at about 80 to 90% and then Errors are put out and quits the installation, You will need to swap the installation OS CD with another one, as either the CD itself is corrupted and does not contain the needed install drivers to complete installation. After the installation CD/DVD is replaced, the installation should automatically continue from where it stops until it successfully reaches 100% and installation is complete.

**In the Full Course, you will learn everything you need to know about Operating System to becoming a Competent Operating System Administrator with Certificate.**





# *Operating System Course Outline*

Operating System - Introduction/Overview  
Operating System - Types  
Operating System - Services  
Operating System - Properties  
Operating System - Processes  
Operating System - Process Scheduling  
Operating System - Scheduling algorithms  
Operating System - Multi-threading  
Operating System - Memory Management  
Operating System - Virtual Memory  
Operating System - I/O Hardware  
Operating System - I/O Software  
Operating System - File System  
Operating System - Security  
Operating System - Linux  
Operating System - Video Lectures  
Operating System - Exams and Certification





# BISMARCK

**TECHNOLOGY & LEARNING INSTITUTION LIMITED**

Every Life, Every Moment, Every Day. A New Discovery...

**PEACHTREE COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Peachtree?*

**Peachtree** is a financial accounting software application that is used by **small and medium-sized businesses (SMBs)**. Peachtree was developed by **Sage Software**. Peachtree makes it possible for managers to automate and manage lots of accounting tasks.

## *Features of Peachtree*

**1. Users:** Peachtree Accounting programs changes in the number of users that can access the program. Peachtree Premium is limited to only one user since it is meant for home use. For a large company that requires numerous users, Peachtree Quantum provides up to 40 user accounts, so an entire office can access the accounting software.

**2. Business Management Tools:** The accounting software you use for your company can affect the overall accuracy of financial records, as well as the effectiveness of the business. Peachtree accounting software products have accounts payable, accounts receivable, backups, payroll services, customizable reports, Quickbooks conversions, budget creators, auditing tools and inventory management.

**3. Credit Card Processing:** In business, it is important to be able to accept credit and debit card transactions. Peachtree products let users carry out credit card and debit charges directly through the product itself with their Peachtree merchant account.

**4. Invoices and Estimates:** There is no general specification of invoice or direct estimate for every type of business. Peachtree programs have easily customizable forms. You can add your logo, choose between product or service invoice types and customize the columns and fields that you want to appear on your invoice and estimates.

**5. Customer Service:** Every Peachtree program you purchase comes with customer service support through email, online chat and over the telephone. Businesses can apply for auto-renewal services so that their Peachtree software would be automatically updated and their licenses are renewed without any challenges in the process.



## *Benefits of Using Peachtree*

**1. Easy to Setup:** One of the greatest advantages you get from using the Peachtree software is that you can be up and running in less than an hour. You do not need to know very much or anything about accounting to set it up.

**2. Functionality:** Peachtree is a fully practical accounting software. Peachtree allows you to give out invoices to your clients, accept payments, print checks, pay your employees, keep track of expenses, enter journal entries, and many more.

**3. Easy to Use:** Another great benefit of setting up and using the Peachtree software is that you do not need a degree in accounting to use it. For most of the functions peachtree, it is as easy as locating the button on the screen and clicking on it, which will bring up the relevant window where you can access all of the information that you need to use.

**4. Cost-Effective:** Another great benefit of using Peachtree software is that it is a cost-effective solution to your financial needs. Based on the version that you obtain according to their website, you can assume to spend anyplace from a few hundred dollars to a few thousand dollars, which is very generous for the amount of functionality and reliability that you are getting from it.

**5. Reporting Capabilities:** Peachtree comes loaded with a very large amount of reports that are all modifiable in one way or the other. They all can either be printed or converted to PDF or just dropped directly into Microsoft Excel. Almost all of the reports on the screen have marched down capability that will give you more information on what makes up the figure that you are looking at.

**In The Full Course, you will learn everything you need to know about Peachtree with Certification of Completion** to showcase your knowledge and competence.



# *PeachTree Course Outline*

- Peachtree - Installation
- Peachtree - Overview for the Non-Accountant
- Peachtree - Creating a Company
- Peachtree - Setting up General Ledger
- Peachtree - Setting up Customers
- Peachtree - Setting up Vendors
- Peachtree - Setting up Inventory
- Peachtree - Setting up Payroll
- Peachtree - Setting up Jobs
- Peachtree - Customer Transactions
- Peachtree - Vendor Transactions
- Peachtree - Inventory Transactions
- Peachtree - Payroll Transactions
- Peachtree - General Journal and Banking Tasks
- Peachtree - Other Tasks and Transactions
- Peachtree - Reports
- Peachtree - Video Lectures
- Peachtree - Exams and Certification





# BISMARCK

**TECHNOLOGY & LEARNING INSTITUTION LIMITED**

Every Life, Every Moment, Every Day. A New Discovery...

**PRINTING TECHNOLOGY COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Printing Technology?*

**Printing Technology** is defined as the process of reproducing images, colors, shapes and texts on paper and other print materials. The earliest non-paper product that involve printing include objects such as the Cyrus Cylinder, Cylinder Seals and the Cylinders of Nabonidus.

**The earliest known kind of printing** as implemented on paper was woodblock printing, which first appeared in China before 220 AD. Succeeding developments in the areas of Printing Technology brought about the development of the movable type that was invented by Bi Sheng around the year 1040 AD and the printing press that was built by Johannes Gutenberg in the early 15th century. The technology of mass printing has brought about the spread of information and learning to the general public and masses.

**Digital Printing** is the process of developing and printing digital-based images directly into a variation of media substrates. There is no need for a printing plate, not like with offset printing. Digital files such as desktop publishing files or PDF files can be sent directly to the digital printing press to print its contents on paper, canvas, photo paper, fabric, cardstock, synthetics, and other substrates.

## *What is Printing Technology?*

**There are many types of printing machines such as:**

1. Digital Printers
2. Ink-Jet Printers
3. Screen Printers
4. Heat Press Machines
5. Flexographic Printers
6. Laser Printers
7. Pad Printers
8. Offset printers
9. Rotogravure Printing Machines

**Some recognizable brand names of Xerox digital printers include** iGen, Xerox Color, Nuvera Versant, and D Series production printers and digital presses, as well as Xerox Brenva, Rialto, Impika, CiPress, and Trivor production inkjet and also continuous feed printers.



# *Features and Characteristics of Printing Technology*

**There are many features of Printing technology. Below are some of the features:**

1. Digital printing comes with changeable data capability and it is a classic printing tool for generating customizable works. While modifications are allowed, the digital printing process does not risk losing the original image.
2. As digital printing presents a more efficient communication medium as compared to offset printing, it can help you save a lot of printing time and it lets you work on more projects. An excellent advantage of using digital printing is that you can design an image on your PC and use it as a master image.
3. With the advancement of technology, especially in the areas of printing technology, different functionalities and features of a digital printer have raised the print quality of digital printers.





## *How Printing Works*

**The three most common methods of printing are called:**

1. Relief (or letterpress),
2. Gravure (or intaglio),
3. Offset.

**Relief Printing** is the most popular kind of printing, it is done by making a reversed, sticking-up (relief) version of whatever you want to print on the surface of the printing plate and simply cover it with ink. Because the printing surface is above the rest of the plate, only this part (and not the background) pick up any ink, then push the inked plate against the paper (or whatever you're printing) and a right-way-round printed copy instantly appears.

**Gravure Printing** is the exact opposite of relief printing. Instead of making a raised printing area on the plate, you dig or scrape an image into it (a bit like digging a grave, hence the name gravure). When you want to print from the plate, you coat it with ink so the ink fills up the places you've dugout, then you wipe the plate clean so the ink is removed from the surface but left in the depressions you've carved out.

**Offset Printing** also transfers ink from a printing plate onto paper (or another material), but instead of the plate pressing directly against the paper, there is an extra step involved. The inked plate presses onto a soft roller, transferring the printed image onto it, and then the roller presses against the printing surface—so instead of the press directly printing the surface, the printed image is first offset to the roller and only then transferred across. Offset printing stops the printing plate from wearing out through repeated impressions on the paper and produces consistently higher quality prints.



## *Benefits of Printing Technology*

**There are many benefits of taking the Printing Technology course and some of them are:**

1. Almost every established printing press worldwide needs candidate who possesses a certificate in Printing Technology. Listing out the most significant of these are the printing presses of the magazines and journals and the newspaper printing press. The sound knowledge of the candidate as a quality technician pulls him towards enormous job profiles with high pay, which waits for him.
2. Lots of careers in Printing are available in a number of commercial and manufacturing companies. So this course on printing technology would take you a long way toward knowing most of what you would need to be certified in the field of Printing Technology.
3. Printer Manufacturing is another area that presents great opportunities for Printing Technology degree holders. Shreeji Printers and Auto Print are notable offset printer manufacturers that require qualified professionals in printing.



## *Why Study Printing Technology?*

- 1. Skill Combination:** Printing technology combines various skills such as scientific, technical and artistic.
- 2. Job Opportunities And Career Advancement**
- 3. Self-employment Opportunities And Consultancy**
- 4. Increase Your Earning Potential**

## *Printing Technology Course Outline*

Printing and Its Meaning  
History Of Printing  
The Origin And Development Of Print Technology  
Types Of Printing  
Four Major Printing Processes  
Comparison Between Printing Processes  
Printing Typography  
Paper For Printing  
Printing Type Color  
Printing Type Design  
Printing Typestyle  
Traditional Printing Vs Modern Typography  
Desktop Publishing DTP  
Summary  
Printing Video Lectures  
Printing Exams and Certification





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Every Life, Every Moment, Every Day. A New Discovery...

**PLUMBING TECHNOLOGY COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Plumbing Technology?*

**Plumbing Technology** is the complex mechanism that makes up a functional plumbing system.

**Plumbing** is any system that carries fluids from one place to the other for a wide range of applications and functions. Plumbing makes use of valves, pipes, plumbing fixtures, tanks, and other appliances and apparatus to carry fluids. Heating and cooling systems, waste removal, and other portable water delivery appliances are also among the most common use cases for plumbing, but it is not limited to just these applications.

**Plumbers** are generally responsible for the installation, maintenance, and repairs of pipe systems and water drainage systems. Plumbers are skilled workers that develop and maintain the long systems of pipes that transport water and other fluids and gasses to buildings and drain systems that flush dirty water away.

**Plumbers** make use of current and latest technologies that are designed to conserve water and make plumbing systems very efficient. As a construction and development worker or as a self-employed plumber, certified professionals in plumbing technology make use of specialized tools and equipment to install water, disposal and drainage systems for new housing and business offices.



## *Features of Plumbing Technology*

**There are lots of features of Plumbing Technology, and some of them are:**

**1. PVC/CPVC:** These are stiff and rigid plastic pipes that are very similar to PVC drain pipes but possess thicker walls to deal with heavy water pressure. PVC stands for polyvinyl chloride, and it has become a standard replacement for metal piping.

**2. PP:** This material is primarily used in housewares, food packaging, and clinical equipment, but from the early 1970s, we have seen increasing use worldwide for both domestic cold and hot water. PP pipes are heat fused, being unsuitable for the use of solvents, glues, or mechanical fittings. PP pipe is often used in green developing projects.

**3. PBT:** This is the flexible (usually gray or black) plastic pipe that is attached to barbed fittings and secured in place with a copper crimp ring.

**4. PEX:** This is a cross-linked polyethylene drainage system that has fittings which are joined together mechanically employing barbs, and crimped steel or copper rings.

**5. Poly tanks:** This is used to refer to plastic polyethylene cisterns, above-ground water tanks, underground water tanks. They are usually made up of linear polyethylene that is suitable to be used as a potable water storage tank, provided in white, black or green.

**6. Aqua:** Also known as PEX-Al-PEX, for its being a PEX/aluminum sandwich, which is made up of aluminum pipe that is jammed between several layers of PEX, and connected with altered brass compression fittings.



## *Benefits of Studying Plumbing Technology*

**Plumbing can easily be seen as a dirty job**, which might make you wonder why you or anyone would prefer it as a career. However, once you learn more about the field, you will quickly realize that pursuing a plumbing career comes with many benefits. And below are some of them.

1. You earn a lot as a plumber because everybody use plumbing system.
2. For career advancement in building and construction field.
3. Your job is something that would always be needed so you can never be out of jobs.
4. You can work as a corporate plumbing contractor.
5. Job opportunities in building and construction industries.
6. Self-employment opportunity.





# BISMARCK

TECHNOLOGY & LEARNING INSTITUTION LIMITED

Every Life, Every Moment, Every Day. A New Discovery...

**POWER ELECTRONICS COURSE**

**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**



## *What is Power Electronics?*

**Power Electronics** is defined as the implementation of solid-state electronics to the control, and conversion of electric power.

**Power Electronics** is the technology behind regular switching Power Supplies, Power Inverters, Power Converters, Motor Drives and Motor soft Key-starters.

**Power Electronics Course** is the study and implementation of switching electronic circuits to control and maintain the flow of Electrical energy.

**The Capabilities and Economy of the Power Electronics System** are gotten by the current devices that are available. Their features and limitations are a key element in the design of Power Electronics systems.

**Power Electronic devices could be used as switches, or as amplifiers.** An example switch is either open or closed and so gives out no power; it stops an applied voltage and passes no current around, or passes any amount of current with no voltage drop. Semiconductor devices that are being used as switches can sum up this ideal property and so most Power Electronic applications depend on switching devices on and off, which makes systems very efficient and durable as very little power is wasted in the switch. By contrast, in the case of an amplifier, the current through the device changes continuously according to a controlled input. The voltage and current at the device terminals go by a load line, and the power dissipation inside the device is large when compared with the power delivered to the load.



# Components Of Power Electronics

**1. Capacitors:** These have the capacity to store electric charges just as spring is able to store energy in the form of tension.

**2. Inductors:** Also known as Coils, they have inductance and oppose any change in electric current. Inductance is like inertia in a mechanical system, and the inductor is like a flywheel that opposes a change in rotational speed.

**3. Resistors:** These have a resistance that resists the flow of current and generates heat just as brakes have friction, resist motion, and generate heat.

**4. Transformers:** These are used to match the impedance of two portions of a circuit. This means that a transformer can reduce voltage and increase current or alternately increase voltage and decrease current while maintaining the same volt amp product on output as on the input.

**5. Power semiconductors:** The **Diode** passes electric current in one direction and blocks flow in the opposite direction. **Silicon-Controlled Rectifier (SCR) or Thyristor**, this is like a diode in that it will conduct current in the forward direction and block conduction in the reverse direction. The **Transistor** is also designed to conduct current in only one direction, two basic types of transistors are commonly used for high-power switching in modern induction heating power supplies.



# *Features And Characteristics Of Power Electronics*

**Below are some of the Features and Characteristics of Power Electronic Devices**

**1. Electricity:** Electricity is a kind of energy that can be carried around by wires and it is used for heating and lighting, and to provide power for machines. Power electronic devices cannot work without electricity applied to it.

**2. Power Diodes:** A Power diode has a **P-I-N** structure when it is compared to the signal diode that has a P-N structure. In this case, the I (in P-I-N) stands for the intrinsic semiconductor layer to bear the high-level reverse voltage when compared to the signal diode. However, the major disadvantage of this intrinsic layer is that it adds a noticeable resistance during the forward-biased condition. Thus, power diode requires a good cooling arrangement for handling large power distribution. Power diodes are being used in numerous applications which include key starter, rectifier, voltage clamper, voltage multiplier and etc.

**3. Metal-Oxide-Semiconductor Field-Effect Transistor (MOSFET):** A MOSFET is a voltage-controlled majority carrier three-terminal device. When compared to the simple lateral channel MOSFET for low-power signals, power MOSFET has a different structure. It has a vertical channel structure where the source and the drain are on the opposite side of the silicon wafer. This opposite placement of the source and the drain increases the capability of the power MOSFET to handle larger power.

**4. Power Bipolar Junction Transistor (BJT):** A bipolar junction transistor is a kind of transistor that makes use of both electrons and holes as charge carriers.



## *Benefits Of Power Electronics*

**Below are some of the advantages of Power Electronic Devices:**

1. They have a high-efficiency rate which is due to low loss in power semiconductor devices.
2. High reliability of power electronic converter system.
3. Power Electronic Devices has a Long life and less maintenance due to the absence of moving parts.
4. Flexibility in operation
5. Fast dynamic response compared to the electromechanical converter system.
6. Small size and less weight, thus low installation cost.

## *Why Study Power Electronics?*

1. You gain knowledge of fundamentals of power electronics.
2. You learn how to develop electronic devices that have long life and less maintenance.
3. You learn how to develop electronic devices that has high reliability.
4. Job opportunities and career advancement.

## *Power Electronics Course Outline*

Power Electronics - Introduction  
Power Electronics - Switching Devices  
Power Electronics - TRIAC  
Power Electronics - BJT  
Power Electronics - IGBT  
Power Electronics - Pulse Converters  
Power Electronics - Dual Converters  
Power Electronics - Choppers  
Power Electronics - Control Methods  
Power Electronics - Types of Inverters  
Power Electronics - Cycloconverters  
Power Electronics - Matrix Converters  
Power Electronics - Video Lectures  
Power Electronics - Exams And Certification





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**DURATION: 2 WEEKS**

**FORMAT: WEB/PDF PLUS VIDEO LECTURERS**

**CERTIFICATE OF COMPLETION**

## *What is Project Management Technology?*

**Project Management Tech** is the technologies used in the managerial process of any project such as hardwares and software applications to save time and cost.

**No doubt the introduction of technology to Project Management** helps Managers perform better in that it majorly helps to reduce cost of planning and execution as well as saves time and duration of any project.

## *What is Project Management?*

**Project Management** is the appropriate application of Managerial Skills such as Planning, Controlling and Executing towards meeting the goals of a project.

**A Project** can be defined as a temporary endeavor undertaken to creating a unique product, service, or desired result.



# *Benefits of Project Management Technology*

Some of the benefits of Project Management Tech include:

1. It reduces cost and increase performance.
2. It saves time and duration of project.
3. It helps both managers and team perform better.
4. It help in adequate project monitoring and controlling.
5. It help in creating unique product, service and desire results.
6. Communication with stakeholders and project team is seamless.
7. It enables global work delegation.
8. It offers work synchronization.
9. It helps in delivering projects on time.
10. It helps in proper management of project expenditure.
11. It also reduces cost of planning and execution of the project.
12. It helps in proper tracking and statistics of work progress.
13. It helps the project manager to analyze workload within the workforce.
14. It helps the project manager to develop schedule and assign resources to tasks effectively.
15. It helps project managers to develop template for a particular task.
16. It helps project managers and team to stay productive and deliver optimally.



# *Project Management Categories*

**Project Management is achieved through** the appropriate application and organized integration of the 47 logically grouped project management processes, which are categorized into 5 Process Groups and 10 knowledge areas namely:

1. Integration Management
2. Scope Management
3. Time Management
4. Cost Management
5. Quality Management
6. Human Resources Management
7. Procurement Management
8. Risk Management
9. Stakeholder Management
10. Communication management.

**In project lifecycles, we have these stages:**

1. Initiation
2. Planning
3. Execution
4. Monitoring & Controlling and
5. Closing or Exit.

And the project management phases are the initiation stage, planning stage, execution stage, monitoring and controlling stage, and closing stage.

**It is important to know the key constraints** in project management which are majorly 5 and are:

1. Cost,
2. Resources,
3. Quality,
4. Scope
5. Time.





## *Project Management Technology Tools includes*

1. Hardwares: such as plug and play devices, telecom devices etc.
2. Softwares: such as software applications i.e Microsoft Project etc.

## *The Top 10 Project Management Softwares includes*

1. Microsoft Project
2. Wrike
3. Monday.com
4. Clarizon
5. Project Manager
5. Meister Task
6. Zoho Projects
7. Workamajig Platinum
8. Backlog
9. Bitrix24

**In this course, we will first introduce you to Project Management basics** and then take you on the major software used in Project Management. You will become a Competent Project Manager with **Certificate** to showcase your knowledge and competence.



# *Project Management Tech Course Outline*

Project Management Tech - Project Management Basics  
Project Management Tech - MS Project - Introduction  
Project Management Tech - MS Project - Settings  
Project Management Tech - MS Project - Introduction  
Project Management Tech - MS Project - Getting Started  
Project Management Tech - MS Project - Create A New Plan  
Project Management Tech - MS Project - Set Up Resources  
Project Management Tech - MS Project - Resources To Task  
Project Management Tech - MS Project - Plan Duration Cost  
Project Management Tech - MS Project - Track Progress  
Project Management Tech - MS Project - Advance Schedule  
Project Management Tech - MS Project - Status Reporting  
Project Management Tech - Exams and Certification

