

Information Booklet cum Syllabus

Of

Information Technology Tools and Network Basics



National Institute of Electronics and Information Technology

An Autonomous Scientific Society under
Ministry of Electronics and Information Technology, Government of India

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1. **About Course**

The course is designed to equip a student to use computers for professional as well as day to day use. It provides theoretical background as well as in-depth knowledge of Software/ packages.

2. **NIELIT**

National Institute of Electronics and Information Technology, NIELIT, (Erstwhile DOEACC Society) is an autonomous scientific society of the Ministry of Electronics & Information Technology, Government of India. The Society is registered under the Societies Registration Act, 1860. NIELIT was set up to carry out Human Resource Development and related activities in the area of Information, Electronics & Communications Technology (IECT). NIELIT is engaged both in Formal & Non-Formal Education in the areas of IECT besides development of industry oriented quality education and training program in the state-of-the-art areas. NIELIT has endeavored to establish standards to be the country's premier institution for Examination and Certification in the field of IECT. It is also one of the National Examination Body, which accredits institutes/organizations for conducting courses in IT and Electronics in the non-formal sector.

3. **Objective of Course**

After completing the course, the student will be able to:

- Acquire confidence in using computers in Office and General Life
- Identify the basic components of computers and terminology
- Understand file management
- Create documents using word processor, spreadsheet & presentation software
- Understand computer networks and browse the Internet, content search, email and collaborate with peers
- Use e-Governance applications and use computer to improve existing skills and learn new skills
- Understanding Social Networking platform
- Using the Internet for Digital Financial services
- Develop knowledge about FutureSkills
- Understand the various financial services and be aware of the various schemes started by Government.

4. **Job Roles of Course**

After successful completion of the qualification the candidates shall be employed in the industries for following occupations:

- Data Entry Operator
- Training/Faculty for Basic Computer courses

5. Eligibility

8th Pass

6. Total duration of the Course

60 Hours (Theory: 30Hrs, Practical: 30Hrs)

7. Course Details

7.1.Course Outline and Objective of Each Unit

S. No.	Unit Name	Duration (Theory) in Hours	Duration (Practical) in Hours	Total Learning Hrs.	Learning Objectives
1	Introduction to Computer	3	2	5	<p>After completion of this unit of module, the Learner will be able to</p> <ul style="list-style-type: none"> • Identify computers, IT gadgets and explain their evolution and applications. • Get familiar with various input, output and hardware components of a computer along with storage devices. • Get familiar with various types of software, utilities used for computer and mobile apps.
2	Introduction to Operating System	3	3	6	<p>After learning this unit, Learner will be: Well acquainted with</p> <ul style="list-style-type: none"> • Operating System and its applications for both desktop and mobile devices. Able to identify various • desktop screen components and modify various properties, date, time etc. • Able to add and remove new program and features, manage files and folders. • Well versed with printing and

					know various types of file extensions.
3	Word Processing	4	4	8	<p>After completion of this unit, Learner will have in depth knowledge of</p> <ul style="list-style-type: none"> • Word Processing, their usage, details of word processing screen. • Opening, saving and printing a document including pdf files. • Document creation, formatting of text, paragraph and whole document. • Inserting Header and Footer on the document. • Finding text on a word document and correcting spellings. • Inserting and manipulating tables, enhancing table using borders and shading features. • Preparing copies of a document labels etc. for sending various recipients using Mail Merge
4	Spreadsheet	4	4	8	<p>After completion of this unit, Learner will have good hands-on practice on</p> <ul style="list-style-type: none"> • Basic Knowledge of Spreadsheet Processing, their usage, details of Spreadsheet screen. • Opening, saving and printing a Spreadsheet. • Spreadsheet creation, inserting and editing data in cells, sorting and filtering of data. • Inserting and deleting rows /columns. • Applying basic formulas and functions. • Preparing chart to represent the information in a pictorial form
5	Presentation	4	4	8	<p>After completion of this unit, Learner will have good hand-son practice on</p> <ul style="list-style-type: none"> • Basic Knowledge of presentations.

					<ul style="list-style-type: none"> • Opening/saving a presentation and printing of slides and handouts. • Manipulating slides to enhance the look of the slides as well as whole presentation by inserting a picture, objects, multimedia formatting etc. • Running a slide show with various transitions.
6	Introduction to Internet and WWW	3	4	7	<p>After completion of this unit, Learner will be able to</p> <ul style="list-style-type: none"> • Gather knowledge of various types of networks and topologies • Get an overview of the Internet, its applications and various browsers available to access the Internet. • Connect to the Internet using various modes of connections/devices available. • Get knowledge of device identification on local network as well as on the Internet for both Desktop and Mobile Devices. • Can search Information on the Internet on various topics. • Download and print web pages
7	E-mail, Social Networking and e-Governance Services	4	4	8	<p>After completion of this unit, Learner will be able to</p> <ul style="list-style-type: none"> • Create an email account, compose an email, reply an email and send the email along with attachments • Get familiar with Social Networking, Instant Messaging and Blogs. • Get familiar with e-Governance Services, e-Commerce and Mobile Apps.

8	Digital Financial Tools and Applications	3	3	6	After completion of this unit, Learner will be able to <ul style="list-style-type: none"> • Know the Digital Financial Tools. • Get Knowledge of the Internet Banking Modes. • Use the Digital Locker and will be able to store documents in Digital Locker.
9	Overview of FutureSkills& Cyber Security	2	2	4	After completion of this unit, Learner will be familiar with the <ul style="list-style-type: none"> • Latest trends and technologies in upcoming fields in IECT. • Need of Cyber Security and will be able to secure their PC and Mobile devices by using basic security features.

7.2.Detailed Syllabus

S.No	Unit Name	Contents	Hrs.
1	Introduction to Computer	Computer and Latest IT gadgets, Evolution of Computers & its applications, IT gadgets and their applications, Basics of Hardware and Software, Central Processing Unit, Input devices, Output devices, Computer Memory & storage, Application Software, Systems Software, Utility Software, Open source and Proprietary Software, Mobile Apps.	5
2	Introduction to Operating System	Operating System, Basics of Operating System, Operating Systems for Desktop and Laptop, Operating Systems for Mobile Phone and Tablets, User Interface for Desktop and Laptop, Task Bar, Icons & shortcuts, running an application, Operating System simple setting, using mouse and changing its properties, changing system date and time, changing display properties, to add or remove Program and its features, adding, removing & sharing Printers, File and Folder management, types of file extensions.	6
3	Word Processing	Word Processing Basics, Opening Word Processing Package, Title Bar, Menu Bar, Toolbars & Sidebar, Creating a New Document, Opening and Closing Documents, Opening Documents, Save and Save As, Closing Document, Using The Help, Page Setup, Page Layout, Borders, Watermark, Print	8

		Preview, Printing of Documents, PDF file and Saving a Document as PDF file, Text Creation and manipulation, Document Creation, Editing Text, Text Selection, Cut, Copy and Paste, Font, Color, Style and Size selection, Alignment of Text, Undo & Redo, AutoCorrect, Spelling & Grammar, Find and Replace, Formatting the Text, Creating and using user defined Styles, Paragraph Indentation, Bullets and Numbering, Change case, Header & Footer, Table Manipulation, Insert & Draw Table, Changing cell width and height, Alignment of Text in cell, Delete / Insertion of Row, Column and Merging & Splitting of Cells, Border and Shading, Mail Merge, Table of Contents, Indexes, Adding Comments, Tracking changes, Macros	
4	Spreadsheet	Elements of Spread Sheet, Creating of Spread Sheet, Concept of Cell Address [Row and Column] and selecting a Cell, Entering Data [text, number, date] in Cells, Page Setup, Printing of Sheet, Saving Spreadsheet, Opening and Closing, Manipulation of Cells & Sheet, Modifying / Editing Cell Content , Formatting Cell (Font, Alignment, Style), Cut, Copy, Paste & Paste Special, Changing Cell Height and Width, Inserting and Deleting Rows, Column, AutoFill, Sorting & Filtering, Freezing panes, Formulas, Functions and Charts, Using Formulas for Numbers (Addition, Subtraction, Multiplication & Division), AutoSum, Functions (Sum, Count, MAX, MIN, AVERAGE),Sort, Filter, Advanced Filter, Database Functions (DSUM, DMIN,DMAX, DCOUNT, DCOUNTA), What-if Analysis, Pivot table Charts (Bar, Column, Pie, Line), Data Validation.	8
5	Presentation	Creation of Presentation, Creating a Presentation Using a Template, Creating a Blank Presentation, Inserting & Editing Text on Slides, Inserting and Deleting Slides in a Presentation, Saving a Presentation, Manipulating Slides, Inserting Table , Adding Pictures, Inserting Other Objects, Resizing and Scaling an Object, Creating & using Master Slide, Presentation of Slides , Choosing a Set Up for Presentation, Running a Slide Show, Transition and Slide Timings, Automating a Slide Show, Providing Aesthetics to Slides & Printing, Enhancing Text Presentation, Working with Color and Line Style, Adding Movie and Sound, Adding Headers, Footers and Notes, Printing Slides and Handouts	8
6	Introduction to Internet and WWW	Basic of Computer Networks, Local Area Network (LAN), Wide Area Network (WAN), Network	7

		Topology , Internet, Concept of Internet & WWW, Applications of Internet, Website Address and URL, Introduction to IP Address, ISP and Role of ISP, Internet Protocol, Modes of Connecting Internet (HotSpot, Wifi, LAN Cable, BroadBand, USB Tethering), Identifying and uses of IP/MAC/IMEI of various devices, Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox, Opera etc.), Exploring the Internet , Surfing the web, Popular Search Engines, Searching on Internet, Downloading Web Pages, Printing Web Pages	
7	E-mail, Social Networking and e-Governance Services	Structure of E-mail, Using E-mails, Opening Email account, Mailbox: Inbox and Outbox, Creating and Sending a new E-mail, Replying to an E-mail message, Forwarding an E-mail message, Searching emails, Attaching files with email, Email Signature, Social Networking & e-Commerce, Facebook, Twitter, LinkedIn, Instagram, Instant Messaging (Whatsapp, Facebook Messenger, Telegram), Introduction to Blogs, Basics of E-commerce, Netiquettes, Overview of e-Governance Services like Railway Reservation, Passport, e-Hospital [ORS], Accessing eGovernance Services on Mobile Using “UMANG APP”, Digital Locker	8
8	Digital Financial Tools and Applications	Digital Financial Tools, Understanding OTP [One Time Password]and QR [Quick Response] Code, UPI [Unified Payment Interface], AEPS [Aadhaar Enabled Payment System], USSD [Unstructured Supplementary Service Data], Card [Credit / Debit], eWallet, PoS [Point of Sale], Internet Banking, National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), Immediate Payment Service (IMPS), Online Bill Payment	6
9	Overview of FutureSkills& Cyber Security	Introduction to Internet of Things (IoT), Big Data Analytics, Cloud Computing, Virtual Reality, Artificial Intelligence, Social & Mobile, Blockchain Technology, 3D Printing/ Additive Manufacturing, Robotics Process Automation, Cyber Security, Need of Cyber Security, Securing PC, Securing Smart Phone	4

8. Reference Books/Study Material

- Miller M, “Absolute Beginners Guide to Computer Basics”, Pearson Education, 2009
- V. Raja Raman, “Introduction to Information Technology”, PHI Learning; 3rd edition (30March 2018)

Practical Assignments:

Assignment 1- Do the following settings

- a. Display pointer trails
- b. Change the normal pointer of a mouse to another pointer
- c. Set the date advanced by 2 months
- d. Reset the system date & time
- e. Set the system time late by 2 hrs: 40 minutes.
- f. Set the Yesterday date and time in your Operating System.

Assignment 2- Do the followings

- a. Interchange the functions of left and right mouse buttons.
- b. Change the wallpaper of your computer and set it to a paint brush file made by you.
- c. Change the screen saver of your computer and change it to ‘marquee’
- d. Set your name as the text and wait time should be 2 minutes.

Assignment 3- Create the following folders under the specified locations using windows.

- a. NIELIT on desktop
- b. R1 on the c: i.e. root
- c. D2 on desktop
- d. R2 on the c:
- e. Create a folder NIELIT-1 under the D1 folder
- f. Create a folder D2-1 under the D2 folder
- g. Copy this D2-1 folder and paste it under R1 folder.
- h. Delete the folder D2-1 from R1 folder
- i. Create the folder R1-1 under R1 folder
- j. Copy R1-1 folder under the R2 folder
- k. Rename folder R1-1 under R2 folder as ‘subfolder of R2’
- l. From the c: copy all files to folder R2
- m. Delete all the files from the folder R2
- n. Recover all the deleted files

Assignment 4- Create a document in Word on a topic of your choice. Format the document with Various fonts (minimum 10, maximum 12) and margins (minimum 1.5, maximum 3).

The document should include

- a. A bulleted or numbered list
- b. A table containing name, address, basic pay, department as column heading
- c. A picture of lion using clip art gallery
- d. An example of word art
- e. A header with student name & date
- f. A footer with pagination

Assignment 5- Create a document with the text given below and save it as First

A Read only Memory is a memory unit that performs the read operation only, it does not have a write capability. This implies that binary information stored in a ROM is made permanent during the hardware production of the unit and cannot be altered by writing different words into it. Whereas a RAM is a general-purpose device whose contents can be altered during the computational process, a ROM is restricted to reading words that are permanently stored within the unit. The binary information to be stored specified by the designer, is then embedded in the unit to form the required interconnection pattern.

Do the following

- a. Count the occurrences of the word “ROM” in the above document.
- b. Replace ROM with Read Only Memory in the entire document
- c. Underline the text Read Only Memory
- d. Make an auto correct entry for ROM and it should be replaced by Read Only Memory

Assignment 6- Use the file First to perform the following operations

- a. Make the first line of document bold.
- b. Make the second line italic.
- c. Underline the third line.
- d. Align the fourth line to center.
- e. Make the font color of first line as red.
- f. Change the font style of fifth line to Arial.
- g. Change the second line to 18 points.
- h. Insert the date & time at the start of document.

Assignment 7 - Use the document saved earlier and perform the page setting as follows.

- a. Top Margin 1.3”
 - b. Bottom margin 1.4”
 - c. Left margin 1.30”
 - d. Right margin 1.30”
-

- e. Gutter margin 1.2”
- f. Header 0.7”
- g. Footer 0.7”
- h. Paper size executive
- i. Orientation landscape

Assignment 8- Create a table in word as shown below with following fields.

Roll No	Name	Marks		Total Marks
		Physics	Chemistry	
1.	Ritu	78	88	166
2.	Amit	90	92	182
3.	Rakesh	67	78	145
4.	Rohit	50	50	100
5.	Niti	60	65	125
6.	Garima	89	67	156

Assignment 9- Do the followings.

- a. In the total marks column, entries should be calculated using formulas and it is the sum of marks in physics and marks in chemistry.
- b. Insert a new row at the end of the table and also find grand total using formula.
- c. Sort the table based on total marks
- d. The date and heading should be center aligned
- e. Heading should be in bold and underlined

Assignment 10- Below is given a letter and some addresses. This letter is to be sent to all these Addresses. User mail merge

Addresses are:

- 1) Amit, H No 424 sector 8D, Lajpat Nagar, New Delhi
- 2) Rohit, H No 444, Sector 125C, Chandigarh
- 3) Jyoti, H NO 550, Sector 16A, Gomti Nagar, Lucknow

To

<<Name>>

<<Address>

> Dear

<<Name>>

You are advised to appear for an interview on the <<Date>>at 9:00 A.M with your original documents.

Yours
Sincerely
ABC
Limited,
Industrial Phase –7, New Delhi.

Assignment 11- Type the following data using spreadsheet tool and save the file as First

A	B	C	D	E
513				
501				
504				
513				
516				
532				
504				
432				
501				
510				
517				
479				
494				
498				
511				

Do the following

- Highlight column A and copy it to column C
- Sort the data in column C in ascending order
- What is the lowest number in the list (use a function)
- Copy the data in column A to column E and sort it in descending order
- What is the highest number in the list (use a function)
- How many numbers in this list are bigger than 500 (use a database function)
- How many numbers in column A are between 520 and 540 inclusive (use a databaseFunction)

Assignment 12- Type the following data in spreadsheet and save it as Second.

A	B	C	D
370	70.5		
61166	53.5		
684	65		
449	76.5		
643	70		
1551	71		

616	60.5		
403	51.5		

Do the following

- Complete column C for finding product $x * y$
- Find sum of x column at the end of data
- Find sum of y column at the end of data
- Find sum of $x * y$ column at the end of data
- Find sum of x^2
- Find sum of y^2

Assignment 13- Enter the following data using spreadsheet tool and save it in Grade

Name	Marks1	Marks2	Marks3	Total	Percentage
Amit	80	70	80		
Renu	70	60	90		
Rajeev	87	89	65		
Munish	76	67	44		
Sanjeev	98	76	78		
Anita	65	76	87		

Do the following.

- Compute the total marks and percentage of each student by entering appropriate formula.
- Compute the grades based on following criteria
If percentage ≥ 90 then grade = A
If percentage ≥ 80 and < 90 then grade = B
If percentage ≥ 70 and < 80 then grade = C
If percentage ≥ 60 and < 70 then grade = D
If percentage < 60 then grade = E
- Draw a border around the worksheet
- Change the font size of heading to 14 points and underline it and hide column c
- Increase the width of column A to 15 characters
- Right Align the values in column B, C, F

Assignment 14- A university maintains a year wise result for four courses and then generates an average report as given below.

Sr. No.	Year	Course1	Course2	Course3	Course4	Average	Total
1	2013	650	675	666	456		

2	2014	600	700	656	765		
3	2015	677	655	765	400		
4	2017	400	400	400	400		
5	2018	560	760	467	737		

- Complete the report to calculate the course wise average in row 6
- Provide formula to calculate year wise average in column G
- Generate a column chart to compare data.

Assignment 15- Set up a new presentation of three slides.

1. On the master slide:

- Apply a theme of your choice to the master slide.
- Include an automated page number in the bottom left of the footer
- Place a clipart image of a pen or pencil as a logo in the top right corner.

2. Add the following text in slide 1

Heading: Hothouse Design (Red, 25 point, Arial font, Left Aligned)

3. On the second slide type the following text where font="Arial" size="20"

Earlier in the year we started to analyze the sales profile for the stationery business stream within Hothouse. The areas of initial investigation were selected as the management of our sales team, our customer base, website effectiveness, and an analysis of our most successful product lines.

4. On the third slide where font="Arial" size="20" Possible timings for these bonuses include:

- Weekly
- Monthly
- Quarterly
- Annually

Assignment 16- Set up a new presentation consisting of 3 slides

1. on the first slide

- Type Telephone Analysis for the title, using any word Art option.
- Insert any appropriate image below the title and apply an Animation effect to theImage.
- Insert a Sound from the Clip Organizer.

2. on the second slide:

- create a pie chart using the following data:

Call type	Minutes
International	1640
Peak Rate	7842
Cheap Rate	1543
Internal	16805

- b) Insert the chart title “Telephone Analysis”.
3. on the third slide:
Enter the following text: (font style="Times new roman", font size= "24")
As you can see that our vast majority of calls are internal. These figures are the Average values per day for all departments, using a monitoring period of 2 weeks.
4. Use the same transitional effect between each slide.
5. Play a slide show.

Assignment 17 -Set up a new presentation consisting of 4 slides

1. On the first slide
 - a) Include an automated slide number left aligned.
 - b) Enter the heading New Website.
 - c) Enter the sub heading Proposed Web Pages.
 - d) Insert any appropriate image below the sub heading and apply an Animation effect to the image.
 - e) Create the following hyperlink <http://www.google.com> on the image
 - f) Insert a Sound from the Clip Organizer.
2. On the second slide:
 - a) create a pie chart using the following data:

Type of Trip	2008 Dives
Go deep	2512
Wreck Week	12680
Shark Experience	940
Cave Dives	353

3. On the third slide:
Enter the following text: (font style=Times New Roman, font size= 24)
During the development of this new website, we have realized that the proposed design brief may need to be amended.
4. On the fourth slide:
Insert a Movie from a File on Your Computer
5. Use a picture as background in all your slides.
6. Use the same transitional effect between each slide.
7. Play a slide show.

Sample Questions:

1. _____ generation of computer started with using vacuum tubes as the basic components.
 - A. 1st
 - B. 2nd
 - C. 3rd
 - D. 4th

 2. The first general purpose electronic computer in the world was
 - A. UNIVAC
 - B. EDVAC
 - C. ENIAC
 - D. EDSAC

 3. Which one is an example of Open source software
 - A. Linux
 - B. Microsoft Excel
 - C. CD
 - D. None of the above

 4. RAM means
 - A. Random Access Memory
 - B. Read Access Memory
 - C. Random Also Memory
 - D. Read Address Memory

 5. The smallest unit of data in computer is _____
 - A. Byte
 - B. Nibble
 - C. Bit
 - D. KB

 6. _____ is the screen background and main area of window where user can open and manage file and programs.
 - A. Desktop
 - B. Application Window
 - C. Icons
 - D. Screen Saver

 7. The space left between the margin and the start of a paragraph is called
 - A. Spacing
 - B. Indentation
 - C. Gutter Margin
 - D. Alignment
-

8. The operating System of computer serves as a software interface between the user and the_____
- A. Memory
 - B. Peripheral
 - C. Hardware
 - D. Screen
9. What are Portrait and Landscape in Libre Writer?
- A. Page Orientation
 - B. Paper Size
 - C. Page Layout
 - D. Text Formatting Tool
10. A Bluetooth network is called
- A. Wireless Network
 - B. Piconet
 - C. WAN
 - D. None of the Above
11. Cyber Security is also known by the name
- A. Network Security
 - B. Information Security
 - C. Information Technology Security
 - D. Internet Security
12. Which Menu of LibreOffice Impress found slide transition command available?
- A. file
 - B. slide
 - C. format
 - D. insert
13. E-banking is synonymous with
- A. Tele-Banking
 - B. Furo Banking
 - C. My Banking
 - D. Internet Banking
14. Which of the following monitors users activity and transmit that information in the background to someone else?
- A. Spyware
 - B. Malware
 - C. Ransomware
 - D. Torjan Horse
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