

# Diploma in Computer Application & Networking (Certified Web cum Graphic Designer & Network Technician)

## Preamble:

Computer is the most common terminology in the present era in all sorts of life. In almost all of day to day activities viz. shopping, medical, studies, travel, communication etc., computer technology is somehow involved. Even it has now reached to our houses and even in our pockets in form of mobile, tablets etc. The IT industry is among the fastest growing industry and largely requires trained manpower for day to day execution of tasks.

## Objective:

- To prepare the candidates with latest knowledge in computer applications.
- To make the candidates proficient in using Multimedia applications.
- To empower the candidates with the knowledge of Hardware & Networking.
- To help the candidates acquire skills to setup their own enterprise.
- To make the candidates employable in Government & Private sectors.

## Duration:

**400 Hours - (Theory: 143hrs + Practical: 257hrs)**

## Expected Job Roles

- Data entry operator
- Office Assistant
- Graphics Designer
- Hardware Technician

## Course Outline:

Sl. No	Module Title	Duration (Hours)		
		Theory	Lab	Total
1	Computer Fundamentals	30	50	80
2	System Maintenance & Information Security	32	48	80
3	Internet Technology and Web Design	32	48	80
4	Multimedia	29	51	80
5	Concepts of DBMS	8	12	20
6	Soft Skills	12	18	30
7	Project work		30	30
	<b>Total Duration</b>	<b>143</b>	<b>257</b>	<b>400</b>
	<b>Total Credits</b>	<b>10</b>	<b>9</b>	<b>19</b>

## Prerequisites:

Nil

## Eligibility

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- a) Class 10.  
 b) Candidates who have appeared in the qualifying examination and awaiting results.

### Detailed Syllabus and Learning Outcome:

S. No	Chapter Name	Course Outline	Duration (Hours)		Learning Outcome
			Theory	Lab	
1	<b>Module-1</b>  <b>Computer Fundamentals</b>  <b>(80 hrs)</b>	1. What is computer? a. Components of Computer System b. Classifications of computers c. Representation of data/Information concepts of data processing 2. What is an operating system and basics of Windows a. The User Interface b. Windows Setting c. Opening and closing of different Windows d. Advanced Windows e. Comparison of DOS and Windows f. Switching Between DOS and Windows g. Basic DOS Commands 3. Word Processing Basics a. Opening Documents and Closing documents b. Moving Around in a Document c. Using a Document/Help Wizard d. Text Creation and Manipulation e. Formatting the Text f. Handling Multiple Documents & Printing Documents 4. Spread Sheet a. Elements of Electronics Spread Sheet b. Opening of Spread Sheet c. Menu bar d. Manipulation of cells e. Providing Formulas f. Spread sheets for Small accountings	30	50	After completion of this module, the candidate will be able to : <ul style="list-style-type: none"> <li>• Operate in Windows OS environment and use its features.</li> <li>• Use DOS commands.</li> <li>• Use Word Processing packages, create document, editing &amp; formatting of text, saving &amp; printing of documents.</li> <li>• Use Spreadsheet software, cell manipulation, use of functions, insertion of charts &amp; graphs.</li> <li>• Use Presentation software, insertion of multimedia contents, slide effects &amp; transitions, animation etc.</li> </ul>

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		i. Maintaining invoices/budgets ii. Totaling of various transactions ii. Maintaining daily and monthly sales reports 5. Making Small Presentations a. Creation of Presentation b. Preparation of Slides c. Providing aesthetics d. Slide Manipulation and Slide Show e. Presentation of the Slides 6. Digital Payment a. Different Mode of digital payment i. Unified Payment Interface ii. Aadhaar Enable Payment System ii. Unstructured Supplementary Service Data v. E-Wallet v. POS b. BHIM (Bharat Interface for Money) c. Digital Locker – Creating, Uploading , Sharing Documents			
2	<b>Module-2</b>  <b>System Maintenance &amp; Information Security</b>  <b>(80 hrs)</b>	1. Computer hardware basics 2. Troubleshooting computers: 3. Computer peripheral devices 4. Trouble shooting OS& Application Software 5. Information Technology and Society: Indian IT Act, Intellectual Property Rights – issues. Cyber laws. 6. Trends in IECT: Cloud computing, Digital signature, e-Governance 7. Information Security basics 8. Workstation Security 9. Internet Security 10. Email Security 11. Backup and Disaster Management 12. OS Installation and Securing	32	48	After completion of this module the participants will be able to <ul style="list-style-type: none"> <li>• Identify the various components of a computer system.</li> <li>• Install Operating System, device drivers &amp; Utility software.</li> <li>• Diagnose &amp; troubleshoot computer system.</li> <li>• Identify the need for Information security</li> <li>• Take a Backup .</li> </ul>
3.	<b>Module -3</b>  <b>Internet Technology</b>	1. Introduction to Internet 2. Internet Applications 3. Internet Technology : TCP/IP – protocol, Internet connectivity, packet	32	48	After completion of this module the participants will be able to <ul style="list-style-type: none"> <li>• Identify the components</li> </ul>

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	<p><b>and Web Design</b> <b>(80 hrs)</b></p>	<p>switching technology, Internet protocols, Internet addressing scheme, Machine addressing (IP address), Modem configuration, Internet accounts by ISP , ISDN, protocol options , service options</p> <p>4. Internet Network and Services on Internet (Definition and Functions): Network definition, Common terminologies: LAN, WAN, node, host, workstation, bandwidth, interoperability, network administrator, network security, network components: servers, clients, communication media, types of network, addressing in Internet , Network topologies</p> <p>5 . E-mail, WWW, Telnet, FTP, IRC and search engine</p> <p>6. Electronic Mail, Email protocols, structure of an Email, Email clients, and web based E-mail. Email encryption</p> <p>7. Web Browsing and Current Trends on Internet: Overview, SGML, web hosting, HTML. CGL, Documents Interchange Standards, components of web publishing, document management, web Page design consideration and principles, search and Meta Search Engines, WWW, browser, HTTP, publishing tools languages, Internet phone, Internet video, collaborative computing, e-commerce.</p> <p>8. HTML Programming Basics: HTML page structure, HTML text, HTML links, HTML document tables, HTML frames, HTML images, multimedia.</p>			<p>of the Internet</p> <ul style="list-style-type: none"> <li>• Identify the protocols used in the Internet.</li> <li>• Send and receive emails</li> <li>• Work with browsers</li> <li>• design HTML Pages</li> </ul>
4.	<p><b>Module-4</b> <b>Multimedia</b> <b>(80 hrs)</b></p>	<p><b>1. Introduction to Multimedia</b> <b>2. Image Fundamentals and Fonts</b> <b>3. Adobe Photoshop</b> Introduction : Photoshop Interface, Raster graphics &amp; Vector graphics, Operations on image Manipulation of Image : The Marquee tool, the Lasso tool, Magic Wand tool,</p>	29	51	<p>After completion of this module the participants will be able to</p> <ul style="list-style-type: none"> <li>• Use Photoshop software for manipulation of images, transformation, retouching, colour correction and creating shapes &amp; logos.</li> <li>• Use Adobe Audition</li> </ul>

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		<p>Inverting Selection, Layers, Brush tool, Eraser tool, Fill tool, Blur tool, Smudge tool, Sharpen tool, Dodge tool, Sponge tool, Darken tool.</p> <p>Transformation &amp; Retouching: Colour Correction: Colour swatch, image modes, colour adjustments, colour selection.</p> <p>Text, Effects, Drawing</p> <p><b>4. Adobe InDesign</b></p> <p>Looking at the Work Area, Setting Up Pages, Using master pages, Laying out pages with frames, Adjusting layout objects automatically, Working with layers.</p> <p>Working with Text, Arranging and Combining Objects, Applying Color, Using the Color palette, Applying colors by dragging and dropping, Creating gradients.</p> <p>Working with Tables</p> <p>Adobe Product Integration</p> <p>Using the Package command, Printing and transparency, Flattener settings, The Separations palette.</p>			<p>software for importing and recording audio, adding effects, audio mixing.</p> <ul style="list-style-type: none"> <li>• Use Adobe Premiere Pro software for editing of video clips, adding transition &amp; effects, adding Text &amp; Titles and exporting video.</li> <li>• Use Adobe InDesign software for creating documents, Boucher, pamphlets, insertion of different image formats, printing, creating PDF and package.</li> </ul>
5.	<p><b>Module-5</b></p> <p><b>Concepts of DBMS (20 hrs)</b></p>	<p><b>1. An Overview of Database Management System:</b> Introduction to database, database system, database management system (DBMS), advantages of DBMS.</p> <p><b>2. Data Base Operations:</b> Data Manipulation-Concept: Database, Relational Database, integrity.</p> <p>Operations: Creating, dropping, manipulating table structure. Manipulation of Data, SQL</p> <p><b>3. Design and Development of Applications using MS Access:</b> Creation of Tables, Queries, GUI, Creation of Forms – text box, labels, list box, combo box, buttons and controls, Generation of Reports, Web browsing to a form, Web Page reports</p> <p><b>4. Design and Development of Applications using MySQL:</b> Creation of Tables, Queries using</p>	8	12	<p>After completion of this module the participants will be:</p> <ul style="list-style-type: none"> <li>• Use Spreadsheet software,</li> <li>• Open, save, Print, Edit spreadsheets</li> <li>• Create and address cells</li> <li>• Manipulate cells</li> <li>• Work with formulas</li> <li>• Spread sheets for Small accountings</li> </ul>

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		MySQL.			
6.	<b>Module-6 Soft Skills (30 hrs)</b>	1. Importance of communication, Types of communication – Verbal/ Non-verbal, Barriers of Communication 2. Interview dress code, controlling nerves, positive visualization, creating an impression, Selling yourself at the interview, Mock interview 3. Importance of etiquette, Professional etiquette, Social etiquette Unit, Corporate Culture, Professional ethics, Mutual respect, Time management 4. Report writing, CV writing, Business letters for general/professional purposes.	12	18	After completion of this module the participants will be: <ul style="list-style-type: none"> <li>Well conversant with professional code of conduct and etiquettes.</li> <li>Well familiar with the process and format of interview and can confidently face interviews.</li> <li>Able to over-come the fear of public speaking by preparing them to develop positive non-verbal communication, researching the target audience.               <ul style="list-style-type: none"> <li>proficient in drafting professional correspondence.</li> </ul> </li> </ul>
	<b>7-Project (30 hrs)</b>			30	After completion of this module the participants will be: <ul style="list-style-type: none"> <li>Identify the need for digital payment</li> <li>Identify the different digital payment methods</li> <li>Create a Digital locker, upload and share documents in the digital locker,</li> </ul>
<b>Total Hours = 400</b>					

### Examination & Certification:

NIELIT's NSQF Examination pattern will be followed for Examination & Certification.

Sl No	Examination Pattern	Modules Covered	Duration in Minutes	Maximum Marks
1	Theory Paper – 1	Module 1 & 2	90	100
2	Theory Paper – 2	Module 3, 4, 5 & 6	90	100
3	Practical -1	Module 1 to 6	180	90

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4	Internal Assessment	Module 1 to 6	-	30
5	Project/Presentation /Assignment	Module 1 to 6	-	30
<b>Total</b>				<b>350</b>

Note:

1. Pass percentage would be 50% marks in each component, with aggregate pass percentage of 50% and above.
2. Grading will be as under:

Grade	S	A	B	C	D
<b>Marks Range (in %)</b>	>=85%	>=75% - <85%	>=65% - <75%	>=55% - <65%	>=50% - <55%

3. Theory examination would be conducted online and the paper comprise of MCQ and each question will carry 1 mark.
4. Practical examination/Internal Assessment/ Project/Presentation/Assignment would be evaluated internally.
5. Major Project/Dissertation would be evaluated preferably by External / Subject Expert including NIELIT Officials.
6. Candidate may apply for re-examination within the validity of registration.
7. The examinations would be conducted in English Language only.

### Recommended hardware/software tools:

1. High-end Multimedia System
2. All Hardware Components for Assembly & Disassembly of PC
3. Printer
4. Microsoft Office 2016
5. Adobe Photoshop CS6
6. Adobe Audition CS6
7. Adobe Premiere Pro CS6
8. Adobe InDesign CS6
9. Bootable Windows 7, 8, 10 DVD, Pendrive

### Faculty:

Module	Faculty Qualification
Module – 1	BCA / BSc (CS) / O Level / PGDCA / Graduate with 6 months Diploma in Computers or above
Module – 2	BCA / BSc (CS) / O Level / PGDCA / Graduate with 6 months Diploma in Computers or above. Experience on Multimedia software is a must.
Module – 3	BCA / BSc (CS) / O Level / CHMO/ PGDCA / Graduate with 6 months Diploma in Computers or above. Experience on Computer Hardware & Networking is a must.
Module – 4	BA (English) / MA (English) with teaching experience on Soft Skills.

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### References

1. Foundations of Computing - Pradeep K. Sinha & Priti Sinha
2. Working in Microsoft Office – Ron Mansfield
3. Troubleshooting Maintaining & Repairing PC – Stephen J. Bigelow
4. Adobe Photoshop CS6 Classroom in a Book – Adobe Creative Team
5. Adobe Audition CS6 Classroom in a Book – Sandee Adobe Creative Team
6. Adobe Premiere Pro CS6 Classroom in a Book – Adobe Creative Team
7. Adobe InDesign CS6 Classroom in a Book – Sandee Adobe Creative Team
8. Business Communication- Asha Kaul
9. Essentials of Business Communication- Rajendra Pal & J.S. Korlahalli
10. Business Correspondence and Report Writing- RC Sharma , Krishna Mohan

<b>Course Name</b>	Diploma in Computer Application & Networking	<b>Vertical</b>	Computer Application, Hardware & Networking
<b>Course Code</b>	DCAN	<b>Rev No</b>	R4
<b>Prepared By</b>	W Orendro Kumar Singh	<b>Proposed NSQF Level</b>	3
<b>NIELIT Centre</b>	Kohima	<b>Last Revised on</b>	03/06/2019