

Sector: Information Technology

Sr. No	Specialization	Page no
1	NCITP (NIELIT Certified IT Professional)	

1. Specialization: NIELIT Certified IT Professional

Certificate Level - I

Basic Applications of Information Technology

	Hrs.
1. Application of Information Technology	30
<ul style="list-style-type: none">• Understanding Computer System Component• Using computers for :<ul style="list-style-type: none">○ Creation/Customization of Files/Folders○ Establishing Internet connectivity and Internet browser○ Email and related services	
2. Applications of Word Processing Tools	36
<ul style="list-style-type: none">• Using Word Processor for daily needs• Page style and templates• Editing and Advanced format options• Working on multiple documents• Creating and Working with tables• Working with Images, Drawing and Gallery objects	
3. Effective Communication – Emailing	30
<ul style="list-style-type: none">• Basics of Effective emailing• Composing email and attaching files• Sending, forwarding and receiving emails• Organizing Emails & Managing contacts• Scheduling appointments using online calendar services	
4. Using spreadsheet for Data preparation and Analysis	30
<ul style="list-style-type: none">• Exploring spreadsheet• Inserting and deleting cells• Formatting Spreadsheet• Using Formulae• Using Functions and Obtaining charts	
5. Preparing a Basic Presentation	30
<ul style="list-style-type: none">• Basics of a presentation• Inserting and duplicating slides• Formatting slides• Inserting hyperlink, pictures and tables• Setting up slide show	
6. IT Occupational Ethics and Safety	24
<ul style="list-style-type: none">• Right to Privacy• Netiquettes• IT Hazards e-Waste	

<ul style="list-style-type: none"> • Ergonomics and health safety 	
7. Work Integrated Learning IT - BIT	12
<ul style="list-style-type: none"> • Identify operations at workplace and the tools being used • State organizational structure and identify IT development team 	
8. Practicing & Learning Effective Typing Technique using Typing Application (Basic)	28
9. Soft Skill :Communication Skills, Vocabulary Development, Pronunciation, Reading, Listening And Speaking, Writing	30
Total Vocational Content	250

Certificate Level - II

IT Enabled Office Management

	Hrs.
1. Implementation of Networks	30
• Evolution of Networking and Need for Networking	
• Transmission of Data through different Switching Techniques	
• Data Communication Terminologies	
• Transmission Medium and Network Devices	
• Network Types and Layouts	
2. Applications of Word Processing Tools : Advanced	30
• Reviewing and editing documents with Track Changes	
• Connecting Data from Spreadsheet with the Document using Mail Merge Feature	
• Object Embedding and Linking	
• Language Correction	
• Securing Document	
3. Using Spreadsheet for Data preparation and Analysis - Advanced	30
• Managing Multiple Spreadsheets and Workbooks	
• Organizing and handling Spreadsheet Data	
• Creating Charts	
• Creating and Using Macros	
• Securing Spreadsheets	
4. Advanced Digital Presentation	36
• Standardization of Slides	
• Multimedia Components in Presentation	
• Using Tables	
• Using Charts	
• Presentation Delivery	
• Securing Presentation	
5. Designing Web Pages (Basic)	42
• HTML – Basic Tags	
• Paragraphs and Tables	
• Web Page Layout	
• Forms	
• Multimedia Content in WebPages	
6. Computer Systems Care	12
• Hardware Safety and Security	
• Software Safety, Security and Care	

7.	Work Integrated Learning IT - OM	12
	• Identification of Work Areas	
	• Work Experience	
8.	Practicing & Learning Effective Typing Technique using Typing Application	28
9.	Soft Skill :Communication Skills, Vocabulary Development, Pronunciation, Reading, Listening And Speaking, Writing	30
	Total Vocational Content	250

Certificate Level -III

IT System Management

	Hrs.
1. Implementing Network Safety & Security	40
<ul style="list-style-type: none">• Network Safety concerns• Network Security tools and services• File permissions and authorization• Cyber Security• Safe practices on Social networking	
2. Applications of Image Editing tools - Open Source Design Tools	40
<ul style="list-style-type: none">• Interface and Drawing Tools in GIMP (GNU Image Manipulation Program)• Applying Filters• Creating and handling multiple layers• Using Stamping and Smudging tools• Importing pictures	
3. Troubleshooting Computer Systems	30
<ul style="list-style-type: none">• Commonly encountered problems• Troubleshooting	
4. Work Integrated Learning IT - ISM	14
<ul style="list-style-type: none">• Identification of Work Areas• Work Experience	

Web Applications- I

5. Using Animation Tools for Multimedia Authoring (Basic)	30
<ul style="list-style-type: none">○ Animation Concepts○ Frames and Layers○ Motion and Shape Tweening○ Importing AV Files○ Publishing	
6. Designing Web Pages (Advanced)	30
<ul style="list-style-type: none">○ Review of HTML○ Adding Style Sheets	

○ External style sheets	
○ CSS Properties – border, box, font, margin, padding	
○ CSS classes	
7. Creating interactive Web Pages with Java Scripts	50
● Variables and Operators	
● Decision making using if and switch	
● Iterations - loops	
● Window Object	
● Location Object	
● History Object	
● Popup Boxes – alert, confirm	
8. Soft Skill :Communication Skills, Vocabulary Development, Pronunciation, Reading, Listening And Speaking, Writing, Corporate culture, CRM Concepts, Integrated Skills, Non-Verbal Communication	20
9. Practicing & Learning Effective Typing Technique using Typing Application (Advanced)	26
Total Vocational Content	280

Certificate Level- IV

Data Management Applications

	Hrs.
1. Application of RDBMS	50
<ul style="list-style-type: none">• Understanding RDBMS• SQL – Creating and Opening Database• Creating and populating tables• Modifying the content and structure of table• Ordering and Grouping• Operating with multiple tables	
2. Operating Web Based Applications	30
<ul style="list-style-type: none">• Online Reservation Systems• E-Governance• Online Shopping and Bill payments• Online Tutorials and Tests	
3. Developing Project (Web Based Application)	30
<ul style="list-style-type: none">• Project essentials and tips• Case Study - Online Game• Case Study - Online Quiz• Case Study – Online Bill Calculator	
4. Work Integrated Learning IT – DMA	14
<ul style="list-style-type: none">• Identification of Work Areas• Work Experience	

Web Applications II

	Hrs.
5. Using Animation Tools for Multimedia Authoring (Advanced)	40
<ul style="list-style-type: none">• Familiarization of interface components• Importing pictures• Importing Audio and Video Files• Splitting and Joining Movie Clips• Adding Titles and publishing	

6.	Creating interactive Web Pages with Java Scripts (Advanced)	40
	<ul style="list-style-type: none"> • Java Script review • Functions – user defined • String Object • Math Object • Array Object • Events • Case Studies 	
7.	Customizing and Embedding Multimedia components in Web Pages	30
	<ul style="list-style-type: none"> ○ Compatible Multimedia file formats for Web Pages ○ Embedding Audio file ○ Embedding Video file ○ Embedding Flash file 	
8.	Soft Skill :Communication Skills, Vocabulary Development, Pronunciation, Reading, Listening And Speaking, Writing, Corporate culture, CRM Concepts, Integrated Skills, Non-Verbal Communication	20
9.	Practicing & Learning Effective Typing Technique using Typing Application (Advanced)	26
		280

Certificate Level-V

IT 'O'- Level

	Hrs.
1. IT Tools and Business System	115
<ul style="list-style-type: none">• Computer Appreciation• Computer Organization• Operating System• Word Processing• Spreadsheet Package• Presentation Package• Data Base Operations• Information Technology and Society	
2. Internet Technology and Web Design	115
<ul style="list-style-type: none">• Introduction to Internet• TCP/IP – Internet Technology and Protocol• Internet Connectivity• Internet Network• Services on Internet (Definition and Functions)• Electronic Mail• Current Trends on Internet• Web Publishing and Browsing• HTML Programming Basics• Interactivity Tools• Internet Security Management Concepts, Information Privacy and Copyright Issues	
3. Object Oriented Programming Through C++	115
<ul style="list-style-type: none">• Perspective• The Language of Object-Oriented• C vs. C++• Fundamentals of Classes• Operator Overloading• Composition of Classes• Inheritance• I/O in C++• Advanced Topics• Introduction to the Standard Template Library	
4. Elective: (One Module out of the following three modules to be chosen)	115

Application of .NET Technology

- The .NET framework
- C# Basics
- C# Using Libraries
- Advanced Features Using C#
- ASP.NET 2.0
- Introduction to Programming with Visual Basic.NET
- File and Database Applications
- Advanced Programming Constructs
- .NET Architecture and Advanced Tools

Introduction to Multimedia

- Introduction to Multimedia
- Computer Fonts and Hypertext
- Audio fundamentals and representations
- Image Fundamentals and representations
- Video and Animation
- Multimedia Authoring

Introduction to ICT Resources

- PC Assembly and Operation
- Miscellaneous Utilities
- Networking Concepts
- Network Administration

5. Project (Duration 40 hrs.) 40
Project will be done externally by students.

Total Vocational Content 500

Certificate Level - VI

IT 'A'- Level Part-I

	Hrs.
1. IT Tools and Business System	115
<ul style="list-style-type: none">• Computer Appreciation• Computer Organization• Operating System• Word Processing• Spreadsheet Package• Presentation Package• Data Base Operations• Information Technology and Society	
2. Internet Technology and Web Design	115
<ul style="list-style-type: none">• Introduction to Internet• TCP/IP – Internet Technology and Protocol• Internet Connectivity• Internet Network• Services on Internet (Definition and Functions)• Electronic Mail• Current Trends on Internet• Web Publishing and Browsing• HTML Programming Basics• Interactivity Tools• Internet Security Management Concepts, Information Privacy and Copyright Issues	
3. Object Oriented Programming Through C++	115
<ul style="list-style-type: none">• Perspective• The Language of Object-Oriented• C vs. C++• Fundamentals of Classes• Operator Overloading• Composition of Classes• Inheritance• I/O in C++• Advanced Topics• Introduction to the Standard Template Library	

4.	Computer System Architecture	115
	<ul style="list-style-type: none">• Digital Components• Data Representation• Register Transfer & Micro Operations• Basic Computer Organization• Central Processing Unit• Computer Arithmetic• Input-Output Organization• Memory Organization• Assembly Language Programming	
5.	Structured System Analysis and Design	115
	<ul style="list-style-type: none">• Introduction• System Development Cycle• System Planning• Modular and Structured Design• System Design and Modeling• Input / Output and Interface Design• System Implementation and Maintenance• Computer System Security• OO Analysis/Design• Introduction to Management Information System	
	Total Vocational Content	575

Certificate Level-VII

IT 'A'- Level Part-II

	Hrs.
1. Data Structures through 'C++'	115
<ul style="list-style-type: none">• Analysis of Algorithm• Basics of C++, Elementary Data Structures : Arrays, linked lists• Abstract Data types Stacks and Queues• Trees• Searching, sorting and Complexity• Graphs	
2. Database Management System	115
<ul style="list-style-type: none">• An Overview of Database Management System• An Architecture of the Database System• Relational Database Management System• Normalization• Relational Algebra and Relational Calculus• The SQL Language• Backup and Recovery• Security• Integrity• Design and Development of Database Applications	
3. Operating Systems, Unix and Shell Programming	115
<ul style="list-style-type: none">• Operating System Concepts• Linux Ideas and History• Linux Usage Basics• Running Commands and Getting help• Browsing the File System• The X-Window System• Users, Groups and Permissions• Advanced Topics in Users, Groups and Permissions• The Linux file system in-depth• vim: An advanced text editor• Standard I/O and Pipes• Using the bash shell• Configuring the Bash Shell• Text Processing Tools• Shell Programming	

- Investigating and Managing Process
 - Finding and Processing Files
 - Basic System Configuration Tools
4. Data Communication and Network Technologies 115
- Data Communications
 - Communication Network Fundamentals
 - Media Access Control
 - Networking Components
 - Link Control and MAC Protocols
 - Local Area Networks (LAN)
 - Wide Area Networks (WAN)
 - Application Protocols
 - Wireless Networks
 - Security and Management
5. **Elective (One out of the following two subjects to be chosen)** 115
- i. Problem solving through Object-Oriented Programming through Java
- An Introduction to Java
 - The Java Programming Environment
 - Fundamental Programming Structures in Java
 - Objects and Classes
 - Inheritance
 - Interfaces and Inner Classes
 - Introduction to GUI
 - Graphics Programming
 - User Interface Components with Swing
 - Deploying Applets and Applications
 - Exceptions and Debugging
 - Streams and Files
 - Database Programming
 - **Introduction to UML**
 - An outline Development Process and Use cases
 - Class Diagrams and Advance Concepts
 - Interaction Diagrams, Packages and Collaborations
 - State and Activity Diagrams
 - Physical Diagrams
 - Case Studies
- ii. Software Testing and Quality Management
- Introduction
- Importance of Software Testing

- Testing Techniques and Strategy
- Verification and Validation
- Building Test Cases and Plans
- Quality Assurance and Standards
- Debugging Technique and Tools
- External Source of Errors

6.	Project will be done externally by students.	125
	Total Vocational Content	700

