

Course Curricula
for
Short Term Courses based on
Modular Employable Skills (MES)
in
INFORMATION
&
COMMUNICATION TECHNOLOGY SECTOR



DIRECTORATE GENERAL OF EMPLOYMENT AND TRAINING
MINISTRY OF LABOUR & EMPLOYMENT
GOVERNMENT OF INDIA

Course Curricula for Short Term Courses based on Modular Employable Skills (MES) in the Information & Communication Technology Sector

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Skill Development based on Modular Employable Skills (MES)

Background

The need for giving emphasis on the Skill Development, especially for the less educated, poor and out of school youth has been highlighted in various forums. The skill level and educational attainment of the work force determines the productivity, income levels as well as the adaptability of the working class in changing environment. Large percentage of population in India is living below poverty line. One of the important causes is lower percentage of skilled persons in the workforce

The skill development at present is taking place mostly in the informal way, i.e. persons acquire skill at the work-place when they help their parents, relatives and employers etc. Such persons do not have a formal certificate and thus earn lower wages and are exploited by employers. They have come through informal system due to socio-economic circumstances of the family and the compulsions of earning a livelihood rather than attending a formal course. While their productivity is low, their contribution to the national GDP cannot be ignored. If the country can create a system of certification which not only recognizes their skills but also provides education and training in a mode that suits their economic compulsions, it will not only benefit the workforce to earn a decent living but also contribute to the national economy by better productivity of this workforce.

Another related problem to be tackled is large number of students drop outs (About 63% of the school students drop out at different stages before reaching Class-X).

Frame work for Skill Development based on 'Modular Employable Skills (MES)'

Very few opportunities for skill development are available for the above referred groups (out of school youth & existing workers especially in the informal sector). Most of the existing Skill Development programmes are long term in nature. Poor and less educated persons can not afford long term training programmes due to higher entry qualifications, opportunity cost etc. Therefore, a new frame work for Skill Development for the Informal Sector has been evolved by the DGET to address to the above mentioned problems. The **key features of the new frame work for skill development** are:

- ◆ Demand driven Short term training courses based on modular employable skills decided in consultation with Industry
- ◆ Flexible delivery mechanism (part time, weekends, full time)
- ◆ Different levels of programmes (Foundation level as well as skill upgradation) to meet demands of various target groups
- ◆ Central Government will facilitate and promote training while Vocational Training (VT) Providers under the Govt. and Private Sector will provide training
- ◆ Optimum utilisation of existing infrastructure to make training cost effective.
- ◆ Testing of skills of trainees by independent assessing bodies who would not be involved in conduct of the training programme, to ensure that it is done impartially.
- ◆ Testing & certification of prior learning (skills of persons acquired informally)

The Short Term courses would be based on 'Modular Employable Skills (MES)'.

The **concept for the MES** is :

- ❑ Identification of 'minimum skills set' which is sufficient to get an employment in the labour market.
- ❑ It allows skills upgradation, multiskilling, multi entry and exit, vertical mobility and life long learning opportunities in a flexible manner.
- ❑ It also allows recognition of prior learning (certification of skills acquired informally) effectively.
- ❑ The modules in a sector when grouped together could lead to a qualification equivalent to National Trade Certificate or higher.
- ❑ Courses could be available from level 1 to level 3 in different vocations depending upon the need of the employer organisations.
- ❑ MES would benefit different target groups like :
 - Workers seeking certification of their skills acquired informally
 - workers seeking skill upgradation
 - early school drop-outs and unemployed
 - previously child labour and their family

Age of participants

The minimum age limit for persons to take part in the scheme is 14 years but there is no upper age limit.

Curriculum Development Process

Following procedure is used for developing course curricula

- Identification of Employable Skills set in a sector based on division of work in the labour market.
- Development of training modules corresponding to skills set identified so as to provide training for specific & fit for purpose
- Organization of modules in to a Course Matrix indicating vertical and horizontal mobility. The course matrix depicts pictorially relation among various modules, pre requisites for higher level modules and how one can progress from one level to another.
- Development of detailed curriculum and vetting by a trade committee and by the NCVT

(Close involvement of Employers Organizations, State Governments, experts, vocational training providers and other stake holders is ensured at each stages).

Development of Core Competencies

Possession of proper attitudes is one of the most important attribute of a competent person. Without proper attitudes, the performance of a person gets adversely affected. Hence, systematic efforts will be made to develop attitudes during the training programme.

The trainees deal with men, materials and machines. They handle sophisticated tools and instruments. Positive attitudes have to be developed in the trainees by properly guiding them and setting up examples of good attitudes by demonstrated behaviors and by the environment provided during training.

Some important core competencies to be developed are:

1. Safety consciousness and safe working practices
2. Care of equipment and tools
3. Punctuality, discipline and honesty
4. Concern for quality
5. Respect for rules and regulations
6. Concern for health and hygiene
7. Cordial relationship and Cooperation with co-workers and team Work
8. Positive attitude and behavior
9. Responsibility and accountability
10. Learn continuously
11. Communication Skills
12. Concern for environment and waste disposal

Following competencies should also be developed during level-II and higher courses:

1. Ability for planning, organizing and coordinating
2. Creative thinking, problem solving and decision making
3. Leadership
4. Ability to bear stress
5. Negotiation

Duration of the Programmes

Time taken to gain the qualification will vary according to the pathway taken and will be kept very flexible for persons with different backgrounds and experience. Duration has been prescribed in hours in the curriculum of individual module, which are based on the content and requirements of a MES Module. However, some persons may take more time than the prescribed time. They should be provided reasonable time to complete the course.

Pathways to acquire Qualification:

Access to the qualification could be through:

- An approved training programme; **Or**
- A combination of an approved training programme plus recognition of prior learning including credit transfer; **Or**
- The recognition of prior learning that provides evidence of the achievement of the competencies for the qualification.

Methodology

The training methods to be used should be appropriate to the development of competencies. The focus of the programme is on “performing” and not on “Knowing”. Lecturing will be restricted to the minimum necessary and emphasis to be given for ‘hands on training’.

The training methods will be individual centered to make each person a competent one. Opportunities for individual work will be provided. The learning process will be continuously monitored and feedback will be provided on individual basis.

Demonstrations using different models, audio visual aids and equipment will be used intensively.

Instructional Media Packages

In order to maintain quality of training uniformly all over the country, instructional media packages (IMPs) will be developed by the National Instructional Media Institute (NIMI), Chennai.

Assessment

DGE&T will appoint assessing bodies to assess the competencies of the trained persons. The assessing body will be an independent agency, which will not be involved in conducting the training programmes. This, in turn, will ensure quality of training and credibility of the scheme. Keeping in view the target of providing training/testing of one million persons through out the country and to avoid monopoly, more than one assessing bodies will be appointed for a sector or an area.

Certificate

Successful persons will be awarded certificates issued by National Council for Vocational Training (NCVT).

COURSE MATRIX OF INFORMATION & COMMUNICATION TECHNOLOGY

Level-I

computer fundamental

COMPUTER
FUNDAMENTALS,
MS-OFFICE &
INTERNET

2D- PRE-
PRODUCTION
ANIMATOR

3D- ANIMATION
PRODUCTION

FUNDAMENTALS OF
JAVA(TM)
PROGRAMMING
LANGUAGE-SL110

3D-VISUALISATION
IN ARCHITECTURE

ARCHITECTURAL &
CIVIL 2D DRAFTING
WITH AUTOCAD

BPO Non Voice
Business Training

BPO Voice Business
Training

TALLY 9.0

Telecom Sales

E-commerce start
an on line busines

LINUX Operating
system

Classical Animation

Advanced 3D
Animation Production

Mechanical Drafting &
Modelling with Auto Desk
Inventor (includes Auto
CAD)

Architectural Drafting &
3D Design with Auto
Desk Revit

Level-II

Desk top
Publishing
(DTP)

Computer
hardware

Web
Publishing

Domestic
BPO

Web
Designing

Internet
Kiosk
Operator

Computer
Networking

Print
Publishing

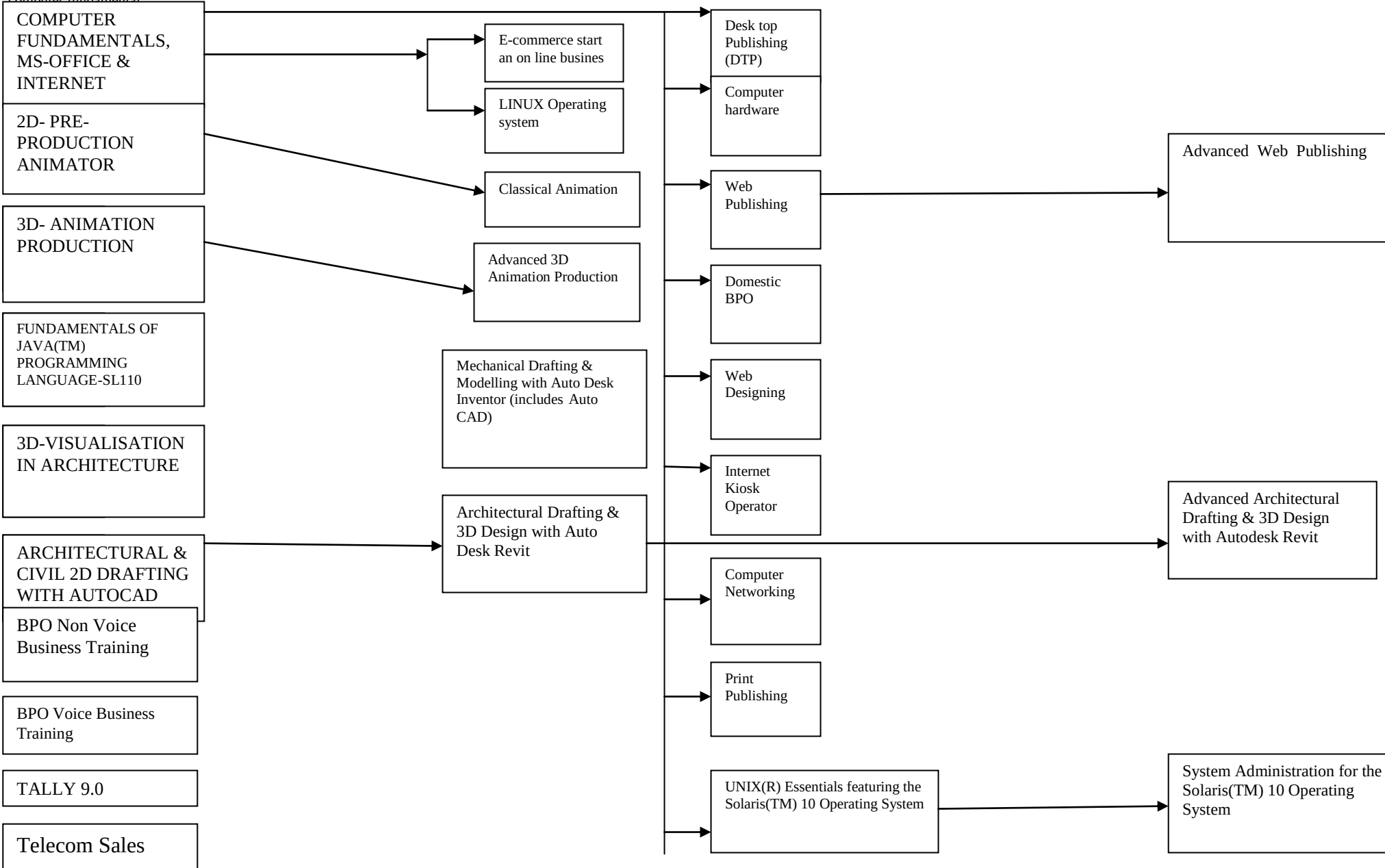
UNIX(R) Essentials featuring the
Solaris(TM) 10 Operating System

Level-III

Advanced Web Publishing

Advanced Architectural
Drafting & 3D Design
with Autodesk Revit

System Administration for the
Solaris(TM) 10 Operating
System



MODULES

Computer Fundamentals, MS-Office, Internet & Soft Skills

1. **Name:** Computer Fundamentals, MS-Office, Internet & Soft Skills
2. **Sector:** Information & Communication Technology (ICT)
3. **Code:** ICT101
4. **Entry Qualification:** Minimum 8th Std. & 14 years and Above
5. **Terminal Competency:** After completion of the training, participants would be able to:
 - Write, Edit & Print documents using MS-WORD & EXCEL.
 - Do tabulation of data.
 - Prepare presentations using MS PowerPoint
 - Use Internet & E- mail.
6. **Duration:** 120 hrs.
7. **Contents:** Given below :

Practical Competencies	Underpinning Knowledge (Theory)
<u>Computer Fundamentals</u> • Customize the Desktop Environment e.g. Desktop, Start Menu, and Taskbar etc. • Configuring & Migrating Files, Folders & Settings – Folder Views, Accessibility Settings <u>MS Word</u> • Creating, Organizing & Formatting Content • Collaborating – Merge, Insert, View, Edit, Track Mode etc. • Formatting & Managing Documents <u>MS Excel</u> • Creating, Analyzing & Formatting Data & Content • Collaborating – Insert, View, Edit etc. • Managing Workbooks <u>MS PowerPoint</u> • Creating & Formatting Content • Collaborating – Track, Edit, Add, Delete Comments, Merge • Managing & Delivering Presentations <u>Internet Concepts</u> • Opening websites and downloading data from them • Writing, reading and sending emails	<u>Computer Fundamentals, MS-Office & Internet</u> • Introduction to Computers • History of Computers • Components of Hardware Peripherals • Concept of Operating System - Windows XP • Exploring & Configuring the Windows XP Desktop Environment – Customize the Desktop, Start Menu, and Taskbar etc. • Configuring & Migrating Files, Folders & Settings – Folder Views, Accessibility Settings • Features of Windows XP • Understanding concepts of Word processing using MS-Word • Understanding concepts of Electronic spreadsheet and various types of entries in it • Understanding concepts of URL • Creating and Opening an E-mail account. • Receiving and sending emails • Searching information on Internet <u>Training on Soft Skills</u> • Communication Skills • Communicative English • Customer Service

Tools & Equipment:

- **Hardware:**

1. Server Computer (Latest configuration)
2. Multimedia Nodes (Pre-loaded Windows 2000 or latest)
3. Inkjet/Laser Printer
4. UPS

- **Software:**

1. Windows 2000
2. Microsoft Office 2003 Professional
3. Anti Virus Software (TVD/ Norton/Any popular brand)
4. Internet connection

Desk Top Publishing

1. **Name:** Desk Top Publishing
2. **Sector:** Information & Communication Technology (ICT)
3. **Code:** ICT203
4. **Entry Qualification:** Minimum 8th Std. & 14 years and Above &
 - MES Module on Computer Fundamentals, MS-Office, Internet & Soft Skills
5. **Terminal Competency:** After completion of the training, participants would be able to:
 - Understand various software used for Desktop Publishing and would be able to create documents with text and graphics like news paper ad, wedding cards, visiting cards, greeting cards etc. using PageMaker, CorelDraw & Photoshop.
6. **Duration:** 150 hrs.
7. **Contents:** Given below :

Practical Competencies	Underpinning Knowledge (Theory)
<u>PageMaker</u> • Working with tool bar • Setting defaults • Opening, saving and closing publications • Inserting and removing pages • Flowing text, resizing the object • Adjusting graphics or text objects • Select multiple elements • Selecting elements behind the others • Mask and group, unmask and ungroup. • Constrain move vertically/horizontally • Paste items, editing objects, rotating text box • Layout window, viewing pages, changing previous and next pages, zooming and hyperlinks Font style, size, case • Subscript and superscript • Inserting Special characters, bullets, page numbering Spacing of character, line, word and paragraph • Breaking and non breaking • Text editing – selecting word, paragraph and a range of text • Indenting/Tabs • Find and change dialogue box • Text recomposition • Compress paint, JPG and GIF files • Using Palletes control, colour palletes, styles palet and master pages pallet • Removing master page objects from pages, control pallets • Making tables, editing data in tables. • Filing, stroking, frames, arranging, text • Wrapping, grouping and ungrouping, locking and unlocking, mask/unmask image, polygon • setting, rounded corners	<u>PageMaker</u> • introduction to various versions, concepts and applications of PageMaker

<u>CorelDraw</u> • Use of various tools such as Pick tools, Zoom tools, Free hand tool, square tool, rectangle tool, Text tool, Fill tool etc. and all fonts used in designing of monograms, logos, posters, stickers, greeting cards, wedding cards, visiting cards, etc. <u>Photo Shop</u> Photo editing /inserting starting with • Setting Up • The Interface • Managing Palettes • Working With Photoshop Tools • Working With Layers	<u>CorelDraw:</u> • Introduction to various versions, concepts and applications of Corel Draw <u>Photo Shop:</u> • Introduction to various versions, concepts and applications of Photoshop
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Tools & Equipment

Hardware

- PCs With latest configuration
- Laser Printer

Software

- Microsoft Windows
- PageMaker Latest Version
- Adobe Photoshop latest version
- Corel Draw

Telecom Sales

1. **Name:** Telecom Sales
2. **Sector:** Information & Communication Technology (ICT)
3. **Code:** ICT104
4. **Entry Qualification:** Minimum 10th Std. & 14 years and Above
5. **Terminal Competency:** After completion of the training, participants would be able to:
 - Understand basics of Sales, Customer and would be able to use them effectively in Telecom sales career
6. **Duration:** 60 hrs.
7. **Contents:** Given below:

Practical Competencies	Underpinning Knowledge (Theory)
• Individual practice on public speaking • Demonstrate Customer Interaction in a stimulated environment • Demonstrate Smile, Wish, greeting & appreciating customers in a stimulated environment • Role play on types of customers • Role play on good customer relationship • Identifying categories & products available in a Retail store • Visit to nearby retail outlets/showrooms/malls. • Demonstrate high end product selling skills in simulated environment • Demonstrate skills in handling complex sale situations in a simulated environment	• Self grooming for a sales career : importance of a good Personality, development in career growth, introduction to communication ,to communicate with customers efficiently Fluency in spoken English • Customer Handling Skills - Basics of customer behaviour - Dynamics of customers: how to build relations with customers • Basics of sales - Orientation to sales & products - Familiarization with the day to day activity of the store, importance of customer orientation while interacting with customers in the store, familiarization with various products useful for telecommunication. • Basics of Telecommunications & Telemarketing Skills • Advanced selling skills Selling high end products, elements of marketing concepts ,marketing mix & strategies. • Team Spirit

Computer Hardware

1. **Name:** Computer Hardware
2. **Sector:** Information & Communication Technology (ICT)
3. **Code:** ICT205
4. **Entry Qualification:** Minimum 10th Std. & 14 years and Above &
 - MES Module on Computer Fundamentals, MS-Office, Internet & Soft Skills
5. **Terminal Competency:** After completion of the training, participants would be able to:
 - Assembling computers & installing the peripheral devices
 - Repair computers up to card level.
 - Install different software on computers
6. **Duration:** 180 hrs.
7. **Contents:** Given below:

Practical Competencies	Underpinning Knowledge (Theory)
Identification and using different input-output devices ,cords, cables,connectors and input-output devices.	<u>Computer Basics</u> - Block Diagram of a Computer System.
- Practice of using Keyboard and mouse. - Booting computer in DOS and Windows environment. - Identifying different error messages.	<u>Storage Devices</u> - Magnetic tape, Floppy Disk, Hard Disk & CD ROM. - Booting the computer - Storage & retrieval of data - Types of software System software & Application software. Functions of operating system, interpreter compiler and _assembler
- Identifying and Practising all the hardware tools. Using FDD & CD Lens cleaning kits. Using cleaning solutions like isopropyl alcohol & carbon tetra chloride. - Using all the relevant tools. Soldering and de-soldering. - Hands-on practice of using the utility programs. - Using hardware-troubleshooting software.	<u>Basic Tools (Hardware & Software)</u> - Straight slot screwdrivers,. Phillips & Torx screwdrivers, Hex nut driver, combination pliers, nose-pliers, chip inserters and extractors, flash light, tweezers, wire cutter and stripper, soldering iron, de-soldering pump, vacuum cleaner, brush ,crimping tool etc. - FDD cleaning kits, CD drives lens cleaning kit, isopropyl alcohol, etc. - DOS & Windows bootable, FDISK, FORMAT, SYS, SCAN DISK, MSD, MSCDEX, Disk Manager, Norton Utilities, DOS & Windows installable, hardware troubleshooting software.
- Identification (type, value, package, polarity) and testing of resistors, capacitors, diodes, transistors/ - Study of suitability of place for computer installation and preparing the site as per specification.	Basic electronic components. - Significance of current, voltage, power, resistance and capacitance. Principle of resistors, capacitors, diode, zener diode, LEDs and transistors. Site Preparation. - Layout of PCs, printers etc., Air-conditioning requirements, Power supply requirements & layout, false roofing, flooring, Line-conditioning equipment and positioning of exhaust fans

To identify different Motherboards, Controller Cards, Display cards and Sound cards, AGPs, Fax/Modem card, TV Tuner card, Ethernet card	• Types of cards used in computer system. Motherboards, Controller Cards, Display cards and Sound cards, AGPs, Fax/Modem card, TV Tuner card, Ethernet card
• Identification of different processors, their pins. Testing and replacing the processors. Understanding coding on the processors	• Types of Interfaces/Connectors. • FDD connectors, IDE & SCSI Interface, Serial (COM) ports, Parallel (LPT) ports, USB connector, Keyboard and PS/2 connectors. • Types of Processors. • Main features, package, voltage, clock speed, Study of different types of Pentium processors.
• Installing and upgrading memory. Identification of memory slots and memory chips. Testing the memory slots and chips	• Types of Memory. • Different types of Memory used in PCs. Installing and upgrading memory. L1 and L2 cache memory
• Checking and replacing motherboards. Installing CPU and memory on Motherboards. Checking and replacing BIOS and Battery.	• Motherboard (Installation, Configuration & Troubleshooting) • Types of Motherboards, Motherboards with different sockets and slots. Jumper settings, DIP switch settings. Installing the processors and memory on MB. Checking MB BIOS. Checking and connecting external battery. On-board features. Installing, checking and replacing Motherboards.
• Checking the fuse, checking output voltage, connecting to Motherboard and other devices. Installing and replacing the power supply. • Installation of Display cards, Super IDE card, SCSI card etc. Installation and configuration of Sound card, Modem, TV tuner card and Ethernet card. Checking and configuring ports.	• Power Supply (Installation & Troubleshooting) • Different types of SMPS (AT & ATX), • <i>Expansion cards (Installation, configuration & troubleshooting).</i> • Study of different types of Cards.
• Installing and connecting the HDD, configuring as master and slave. • Using software tools like Scandisk, FDISK, Norton Utilities, Disk Manager etc. to partition, format surface scan and to mark the bad blocks. Low-level formatting. • Connecting and configuring drives, checking and replacing cables, cleaning the heads, changing the sensors, identifying and rectifying floppy drive problems	• <u>Hard Disk drives (Installation and configuration).</u> • Types of HDD (IDE & SCSI), Installing and connecting HDD, configuring HDD as master or slave, checking media, partitioning, formatting and making HDD bootable. • <u>Floppy Drives (Installation and Maintenance).</u> • Types of FDDs, connections of floppy drives, cleaning drive heads.
• Installing and loading the drivers. Configuring as master and slaves. Cleaning lens of CD Drives writer, DVDs and cleaning head of CTDs. • Hands-on practice of checking and replacing the keyboard cable and KB switches. Servicing the keyboard. • Configuring and optimizing the CMOS set-up.	• <u>CD ROM Drive, DVD & CTD (Installation and Maintenance)</u> • Types of CD Drives, DVDs, data storage and retrieval on CDs, DVDs & CTDs. Connecting and configuring the drives. Maintenance of CDs, DVDs & CTDs. Installation and working of CD Writer • <u>Keyboard servicing and CMOS Setup</u> • Types and working of keyboards. Checking and replacing the keyboard cable and KB switches. Servicing the keyboard.

• Servicing of monitors, changing fuses, adjusting colors, brightness and contrast. Setting resolution, loading drivers. Checking and replacing components on the PCB. Checking and adjusting LCD Monitors. • Configuring and servicing the printers, Self-test, checking printer cables and ports. Loading the drivers and managing the output.	• <u>Monitors (Servicing & Maintenance).</u> • Types of monitors (Mono & Color), Block diagram, CRT, checking the fuses, Adjusting contrast and brightness. LCD Monitors. • <u>Printers (Troubleshooting & Maintenance)</u> • Types and working of different printers (DMP, DeskJet and LaserJet). Checking the interface and cables, setting the DIP switches, self test & servicing the printers. Loading the drivers.
• Installation of DOS & Windows operating systems. Loading and configuring the device drivers. Identifying viruses and using anti-virus programmes to scan and remove different type of viruses • Identify components of a simple LAN environment, to identify different types of cables used for networking, to Identify the protocols installed in an existing LAN setup, m, Identify the NIC installed & MAC address, installation of NIC card. • Make UTP cross cable and testing using continuity tester. Establish connection between two computers using a cross cable • Make a UTP straight patch cord and testing using continuity tester. Connect and test a straight cable using a N-port switch and computers. Establish a peer-to-peer connection. Configure a router Add/ Delete entries in configuration task. Create work groups. • Set IP address and subnet mask. Establish connection. Use of Ping command. Establish sub networks using subnet mask. Share resources in LAN. Fault find and troubleshoot network problems	• <u>Assembling & Dismantling of PCs and Front panel connections.</u> • <u>Software Installation & Virus Protection</u> • Installation and configuration of DOS and Windows operating systems. Installation of Device drivers. Types of viruses, their symptoms, identification, protection and removal. • Serial data communication, principle, standards /protocols and devices/ applications. • Parallel data communication, principle, standards/protocols and devices/ applications. • Features of Networked computers, Components required for networking, Network Topologies. Comparison. Network Protocols, applications, Physical components planning for a small LAN. • Network operating systems and features. • Network cables, types, specifications, standards, application. Peer – to – peer connection. Client –server connection, comparison, applications. • What is router, its function, configuration table, Concept of work groups and uses. UTP Cross cable for testing connection between two computers
• Making of preventive maintenance plan, taking backups using MSBACKUP and other third party tools. Fine-tuning and optimizing the system.	• <u>Preventive Maintenance.</u> • Cleaning the equipment, servicing the equipment, Types of Backup, taking backups and fine-tuning the system,

Tools & Equipment

Hardware:

- Multimedia Computer System with internal Modem
- External Modem
- Laser Printer
- Desk Jet Printer
- Dot Matrix Printer 132 Cols.
- CD Writer (1 – Internal; 1 – External)
- Computer repairing tool kits
- Vacuum Cleaner (small size)
- Soldering Station
- Spare Motherboards, Processor & Memory Modules
- Expansion Cards used in computers (SCSI, TV Tuner, Ethernet)
- Networking tools such as Hub, Switch, Modem, Router, crimping tool, etc

Software:

- Microsoft Windows 2000 (Professional) or Linux OS Latest
- Microsoft Windows XP or any other Word Processor software
- MS DOS (Ver. 6.2 or latest)
- Windows 2003 Server.
- Antivirus Software (Popular Brand)
- Norton Utilities
- Hardware Diagnostics software (Advanced MS Diag. / QA Plus)

Material

- FDD Head –cleaning kits
- CD Lens cleaning kits
- Carbon tetra chloride
- Isopropyl alcohol

Computer Networking

1. Name : Computer Networking.
2. Sector : Information & Communication Technology (ICT)
3. Code : ICT206
4. Entry Qualification : Minimum 10th Std. & 14 years and above.+
MES Module on Computer Fundamentals, MS-Office, Internet & Soft Skills
5. Terminal Competency : After completion of the training, participants would be able to:
Interconnect computers using switch and establish peer-to- peer, client-server connection Create user's groups and allocate rights and privileges
6. Duration : 180 hrs.
7. Contents :

Practical Competencies	Underpinning Knowledge (Theory)
Computer parts and peripherals - Identify the controls of each of these devices including the system (CPU) unit. Practice windows operating system. Identify system specifications. Identify physically devices interfaces installed with a PC, Check status of installed devices using system information and device manager. Practice facilities provided by the device manager. Install a new device (internal/external) to the PC and carryout necessary setting. Identify components of a simple LAN environment. Identify different types of cables used for networking. Identify the protocols installed in an existing LAN setup, Draw LAN diagram, Identify the NIC installed & MAC address ,Install of NIC card. Make UTP cross cable and testing using continuity tester. Establish connection between two computers using a cross cable Make a UTP straight patch cord and testing using continuity tester. Connect and test a straight cable using a N-port switch and computers. Establish a peer-to-peer connection. Configure a router Add/ Delete entries in configuration task. Create work groups. Set IP address and subnet mask. Establish connection. Use of Ping command. Establish sub networks using subnet mask. Share resources in LAN. Fault find and troubleshoot network problems. Trace a network route. Create users, allocate rights and testing. Implement security in LAN. Use Linux commands. Install and uninstall devices using Linux command. Set-up LAN under Linux.	Basic blocks of a digital computer. Function of each block. Personal computer organization. Introduction to various generations of PC's. Brief working and usage of I/O and memory devices used in a PC. Working with computer using windows operating system, Interfacing I/O device to motherboard. Need and function of driver. Identifying devices installed in the PC. Enabling, disabling, refreshing, checking properties of devices installed. Installing new devices, setting and testing Serial data communication, principle, standards/protocols and devices/ applications. Parallel data communication, principle, standards/protocols and devices/ applications. Features of Networked computers, Components required for networking, Network Topologies. Comparison. Network Protocols, applications, Physical components planning for a small LAN. Network operating systems and features. Network cables, types, specifications, standards, application. Peer – to – peer connection. Client – server connection, comparison, applications. What is router, its function, configuration table. Concept of work groups and uses. UTP Cross cable for testing connection between two computers. UTP straight cable and connecting through N-port Switch. Allocation of IP address and Subnet mask. Cabling procedures and introduction to structured cabling. Resource sharing in LAN environment. Creating users in Widows server. Resource sharing and Security. Sharing a single internet connection in LAN, with or without the use of Proxy. Multi user OS.

Tools & Equipment

Hardware

- PCs – Server and Clients with latest configuration
- Networking tools ie. Hub, Switch, Cables, Modem, Router etc.
- Internet Connection

Software

- Microsoft Windows 2003 Server, Windows 95/98/2000/XP, Linux Server
- Antivirus and Network trouble shooting utilities.

Tally 9.0

1. Name : Tally 9.0
2. Sector : Information & Communication Technology (ICT)
3. Code : ICT102
4. Entry Qualification : Minimum 10th Std. & 14 years and above &
5. Terminal Competency : After completion of the training, participants would be able to:
 - Data Entry of transactions in Tally
 - Create Financial Statements
 - Analyse Financial Performance
 - Generate Financial Reports for MIS
6. Duration : 180 hrs.
7. Contents :

Practical Competencies	Underpinning Knowledge (Theory)
Tally Fundamentals (Learning how to use of Tally) Processing Transactions in Tally. Report Generation (Creating statements like Invoice, Bill, Profit & Loss account etc.). Features of Tally (Company creation etc.) Recording Transactions. Budgeting Systems, Scenario management and Variance Analysis, Use Tally for Costing, Ratio Analysis. Cash Flow Statement and Funds Flow Statement Analyzing and Managing Inventory. Point of Sale, Taxation, Multilingual Functionality Payroll Accounting, Systems Administration and Other Utilities	<i>Basics of Accounting,</i> <i>Accounting on Computers,</i> Introduction – Reports. Business Organizations (Different areas like Schools, Colleges, Shops, Factory etc) Double entry system of bookkeeping. Budgeting Systems, Scenario management and Variance Analysis. Costing Systems, Understanding Ratios, Analysis of financial statements Inventory Basics, POS Invoicing, TDS, TCS, FBT, VAT & Service Tax Processing in Tally. Interface in Different Languages, Processing Payroll Functions in Tally What is Management Control Systems

Tools & Equipment

Hardware:

- Server Computer (Latest configuration)
- Laser Printer
- UPS

Software:

- 1 Windows 2000 Server / Linux Server or latest
- Microsoft Office 2003 Professional or any other Office Product or latest
- Tally 9 Single / Multi User Package or latest

Domestic BPO

1. **Name:** Domestic BPO
2. **Sector:** Information & Communication Technology (ICT)
3. **Code:** ICT207
4. **Entry Qualification:** Minimum 10th Std. & 14 years and Above &
 - MES Module on Computer Fundamentals, MS-Office, Internet & Soft Skills
5. **Terminal Competency:** After completion of the training, participants would be able to:
 - Understand the concept of BPO operations and to use them effectively as Customer Relationship Exec in a domestic BPO
6. **Duration:** 180 hrs.
7. **Contents:** Given below:

Practical Competencies	Underpinning Knowledge (Theory)
• Practice sessions with stress on - Voice & accent : Voice clarity & global accent - Voice modulation & intonation - Word stress, syllabi stress - Punctuation ,vowel & consonant sounds - Practice of sentences - Fast speech - Pronunciation • Group Discussion Sessions • Individual interactions • Interview preparation • Personal grooming with stress on skills such as appearance, behavior , voice,etc. • Regular practice of newspaper reading & updating knowledge about day to day happenings.	• Concept of Business Process Outsourcing • Back office management What is Outsourcing. Administrative ,Financial & HR - Administrative outsourcing : Text processing, claim processing, assets management ,Transcription & translation, document management. - Financial outsourcing: billing services, accounting, transactions, general accounting, tax consultancy & compliance, risk management. - HR outsourcing: benefits at the station, recruiting & staffing, parole services, hiring administration, records management, team building ,etc. • Front office management What is a Call Center. - According to location of process- International & Domestic . - According to process : Inbound ,outbound & Blended. - According to characteristic : Voice Based & Web Based - According to functionality : Real Call Center & Virtual Call center • Key Technical Support Provide technical support to customers within And outside organization: troubleshooting for Customers using products & services like PC's, Printers ,internet ,etc. Soft Skills • Listening Skills • Stress / Change Management • Telemarketing Skills • Typing Skills

Tools & Equipment

Tools & Equipment Required (Hardware

- Old PCs
- Old UPS
- Old Laser Printer
- Screwdriver

- Spare H/W components

Software

- Microsoft Windows
- Antivirus Software

Internet Kiosk Operators

1. **Name:** Internet Kiosk Operators
2. **Sector:** Information & Communication Technology (ICT)
3. **Code:** ICT208
4. **Entry Qualification:** Minimum 10th Std. & 14 years and Above &
 - MES Module on Computer Fundamentals, MS-Office, Internet & Soft Skills
5. **Terminal Competency:** After completion of the training, participant would be able to:
 - setup & run/ manage a small venture like Cyber Café
 - Trouble shoot day-to-day minor problems in Cyber café
6. **Duration:** 60 hrs
7. **Contents:** Given below:

Practical Competencies	Underpinning Knowledge (Theory)
• Setting up and operation of an Internet Kiosk • WiFi Gateways • Antennas, Access Points, Bridges • Wireless Kit for RV or Boat • WiFi Repeaters • WiFi Bridge Kit • Battery Backup Power Protection • Cable LAN and Power line Adapters • Internet Cafe Software • Internet Filtering Software • Kiosk Management Software	• How to Set up Internet Kiosk • Familiarity with Internet Kiosk Infrastructure

Tools & Equipment

Tools & Equipment Required (Only for Technical Component)

Hardware

- PCs with latest configuration
- Internet connection
- WiFi antenna, some cables for Demonstration

Software

- Any Internet Kiosk Simulator
- Microsoft Windows
- Antivirus Software

Web Designing

1. **Name:** Web Designing
2. **Sector:** Information & Communication Technology (ICT)
3. **Code:** ICT209
4. **Entry Qualification:** Minimum 10th Std. & 14 years and Above &
 - MES Modules on Computer Fundamentals, MS-Office, Internet & Soft Skills and Desk Top Publishing
5. **Terminal Competency:** After completion of the training, participants would be able to:
 - Open different Internet sites using Search Engine
 - Use different Browsers
 - Create Web Pages using HTML
 - Insert animations using DHTML
6. **Duration:** 180 hrs.
7. **Contents:** Given below:

Practical Competencies	Underpinning Knowledge (Theory)
- Connecting to Internet. - Browsing popular sites and using search engines. - Using HTML editor, creating simple HTML documents, containing heading, body text and comments - Creating web pages with all the features and effects. - Converting MS Office documents to HTML. - Creation of web pages containing tables of different formats. - Practice on modification of tables. - Creating Lists using Bullets and Numbers. - Using HTML for creating web pages with links to other pages different points of a page and link to tables and list. - Creating web pages containing images, - Animation graphics using GIF animator or some other software. - Inserting Images, Video & Sound effects. Marquees of Scrolling text. - Setting and releasing different types of Frames. - Using HTML to design different types of forms, incorporating different type of boxes, buttons, menus and fields. - Processing the form. - Designing web pages with taught elements along with style elements for different characteristics. - Practice cascading style sheets. - Creating animation in the web pages using layers. - Using Apache Software	<u>Introduction to Web</u> - Overview of Internet and W W W. Web pages, home page, Web browsers, search Engines, web sites and servers. <u>Introduction to HTML</u> - HTML features and uses, structure of an HTML document, creating HTML document, adding body text and comments. - Using all the features, colours and other effects of HTML. Converting MS Office documents to HTML. - Tables & Lists – Creating Tables and Lists in HTML documents. - Links - Creating links to local range, other pages, specific part of page, electronic mail. - Images - Including icon and picture in HTML document. Creation of animated GIF. Sizing the pictures. <u>Multimedia Objects:</u> - Adding external images, video, and sound file including device independent (DVI) files. Add marquees of scrolling text. <u>'Frames –</u> - Setting and releasing frames. Using one frame to index another. Creating floating frames, borderless frames and frames with borders. <u>Forms –</u> - Creating basic forms. Adding text box, check box, radio buttons, pull-down menus, single-line text field and password field. Processing the forms. <u>Style sheets –</u> - Creating style sheets to other HTML element, altering different characteristics and features. Cascading HTML style sheets. <u>DHTML –</u> - Creating layers using style sheet syntax. Create animation. - Theory related to practical

Tools & Equipment

Hardware:

- Server Computer (Latest configuration)
- Scanner
- Laser Printer
- UPS

Software:

- 1.Windows 2000 Server / Linux Server or latest
- Microsoft Office 2003 Professional or any other Office Product
- latest version
- Netscape Navigator 4.0 or latest
- GIF Animator & Editor
- Adobe Photoshop
- HTML Editor
- Internet Connection

2D PRE - PRODUCTION ANIMATOR

- 1 Name : 2D PRE-PRODUCTION ANIMATOR
2. Sector : **Information & Communication Technology (ICT)**
3. Code : **ICT 110**
4. Entry Qualification : SSC Passed (10th Std.)
5. Terminal Competency: After completion of training, participants would be able to
- Understand function in Animation production.
 - Understand the requirements of the story and visualize Pre
 - Production concepts.
 - Able to Create storyboards as per the brief given form
 - related animation departments & Design characters as per
 - the script and character description
6. Duration : 240 hours
7. Contents given below

Practical Competencies	Underpinning Knowledge(Theory)
Drawing Basics (Forms & Shapes) Primary and Secondary in both RGB & CMYK schemes/modes. Importance of each primary and secondary color. Proper Application of colors. Analyze colors applied in different print media. Visualize look and feel of a print or a web to apply colors Working with Images in Photoshop Draw artistic characters and shapes. Creating Illustrations apply different color scheme and formats, Working with Palettes, i.e., layers palette, navigator palette, info palette, color palette, Swatches palette, Styles palette, History palette, Actions Palette, Tool preset palette, Channels Palette and Path Palette. Working with Layers. Design Fundamentals, Perspective Drawing, Shading & Shadows adjustment options – Labels, Auto labels, Auto contrasts, Curves, Color balance, Brightness / Contrast, Posterize , Variations. Preparing the file and work area. Creating different shapes. Creating three Dimensional effects using Layers. Working with the magic wand tool and lasso tool. Creating images using Symbol Sprayer	To be able to draw basic forms and shapes which are fundamentals for further drawing sessions Good understanding of design theory, Perspective drawing, shading techniques

Tool. Edit the images using options of Warp Tool. Using Dodge tool, Burn tool, Sponge Tool and Clone Stamp Tool. Editing Selections. Creating images and giving special effects using Filters. Using Layer Styles. Produce an image by mixing two or more different images using Layer Masking & Vector Masking. Sketching for Animation (Stick Figures & thumbnails of actions and poses Drawing Human Figures (Cartoonist) Drawing cartoon human figures using references and imagination Drawing BGs & Layouts Drawing Layouts and BGs for animation sequences Styles of Animation Draw the different styles of Animation and pre production required for each style Types of Characters Draw types of characters based on Physical and behavioral traits (such as emotion, laughing faces ,angry) Designing characters design characters from various animation styles and genres like Heroic, demonic, villain, and various traits Animation Storytelling Design short time animated story and understanding development of a story Film Language Apply camera techniques, framing, continuity etc. to a story. Storyboarding create a professional storyboard Project	Understanding animation principles and drawing thumbnails of actions and poses. Drawing cartoon human figures using references and imagination Drawing Layouts and BGs for animation sequences Understanding the different styles of Animation and pre production required for each style Knowledge of types of characters based on Physical and behavioral traits To be able to design characters from various animation styles and genres like Heroic, demonic, villain, and various traits Importance of storytelling in animation and understanding development of a story Appreciate films and standards used in films like camera techniques, framing, continuity etc. To create a professional storyboard from a concept for animation production
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LIST OF TOOLS & EQUIPMENTS

- a) **Hardware:** Animation Light Boards, Pentium IV PCs, (Multimedia Enabled and Windows XP) , Scanner, Line Test Device, Printer.
- b) **Software:** Adobe Photoshop CS3, Adobe Flash, Adobe Premiere, Toon Boom, Autodesk Maya 8.5, Sound Forge, Adobe Premier, Coral Draw and latest software if needed.

CLASSICAL ANIMATION

1. Name : Classical Animation
2. Sector : **Information & communication Technology (ICT)**
3. Code : **ICT 217**
4. Entry Qualification : SSC Pass (10th) & having completed Course on 2D Pre-Production animator
5. Terminal competencies: After Completion of the training participants would be able Apply Clean Up to “In-betweens and Key frames”
 Apply concepts of Proper Line Quality & Design as per Specifications for during Clean-Up process.
 Create 2D animation production process.
6. Duration: :300 hours
7. Course Content:

Practical Competencies	Underpinning Knowledge (Theory)
Drawing Basics-Forms & Shapes ,To be able to draw basic forms and shapes which are fundamentals for further drawing sessions	Theory related to practical
Design Fundamentals, Perspective Drawing, Shading & Shadows, Good understanding of design theory, Perspective drawing, shading techniques	
Sketching for Animation -Stick Figures Thumbnails, Understanding animation principles and drawing thumbnails of actions and poses.	
Drawing Human Figures-Drawing realistic human figures using references and imagination	
Drawing Key frames- Basics of how to draw a key frame and identify keys in an action	
Ladders & Sheets -To be able to read a ladder and understand timing of a scene	
Drawing In between -Understanding the Principles of Animation and applying the same to create in-betweens of animation sequences	
Clean Up-To be able to clean up the keys and in-betweens for final animation. Understand animated sequences and create cleanup drawing for production	
Ink & Paint-Digitize the In-between drawings and apply colors as per the scene design	
Flash Animation-Integrated the in-betweens & Keys to create an animation sequence, to be able to use digital tools for creating animation shorts.	
Project	

LIST OF TOOLS & EQUIPMENTS

- a) **Hardware:** Animation Light Boards, Pentium IV PCs, (Multimedia Enabled and Windows XP) , Scanner, Line Test Device, Printer.
- b) **Software:** Adobe Photoshop CS3, Adobe Flash, Adobe Premiere, Toon Boom, Autodesk Maya 8.5, Sound Forge, Adobe Premier, Coral Draw and latest software if needed.

3D ANIMATION PRODUCTION

1. NAME : 3D ANIMATION PRODUCTION
2. SECTOR : **Information & Communication Technology**
3. CODE : **ICT 111**
4. ENTRY QUALIFICATION : SSC Passed (10th)
5. TERMINAL COMPETENCY: After Completion of the training participants would be able to:

- Gain knowledge of Animation production process. Create High Quality animation using specific instructions
- Acquire strong understanding of Classical Animation Principles and apply them to 3D Character Animation. :300Hrs.

6. Duration

7. Course Content:

Practical Competencies	Underpinning Knowledge (Theory)
Drawing Basics To able to draw basic forms & shapes which are fundamentals for further drawing sessions	Theory related to practical
Design Fundamentals, Perspective Drawing, Shading & Shadows-(Good understanding of design theory, Perspective drawing, shading techniques	
Drawing Human Figures Good understanding of design theory, Perspective drawing, shading techniques	
Sketching for Animation -Stick Figures & Thumbnails, Understanding animation principles & drawing thumbnails of actions and poses	
Digital Imaging-Designing images for texture	
Animation- Strong understanding of Animation principles and creating professional animation sequences Understanding human anatomy and create Animation	
Lighting –Understanding different lighting effects & Lighting up the animated sequences	
Final Project	

LIST OF TOOLS & EQUIPMENTS

a) **Hardware:** Animation Light Boards, Pentium IV PCs, (Multimedia Enabled and Windows XP) , Scanner, Line Test Device, Printer.

b) **Software:** Adobe Photoshop CS3, Adobe Flash, Adobe Premiere, Toon Boom, Autodesk Maya 8.5, Sound Forge, Adobe Premier, Coral Draw and latest software if needed.

ADVANCED 3D ANIMATION PRODUCTION

1. **Name** : ADVANCED 3D ANIMATION PRODUCTION
2. **Sector** : **Information & Communication Technology (ICT)**
3. **Code** : **ICT 218**
4. **Entry Qualification** : SSC (10th) Passed & having completed Course on 3D Animation Production
5. **Terminal Competency**: After Completion of course participants would be able to Gain knowledge in 3D animation production process
Understanding 3D Modules i.e. Modeling, Digital Texturing, Rigging, Animation & Lighting, Artistically and Digitally.
Create 3D Characters and animate them.
Create 3D animated environments Produce animated short films as teams
6. **Duration** : 300 hours
7. **Course Content** :

Practical Competencies	Underpinning Knowledge (Theory)
Digital Imaging-Designing images and textures especially for Animation	
Modeling-Designing human figures & images for texture .Create professional models for animation production	
Texturing- Designing images for textures Create textures for characters and backgrounds	
Rigging –Understanding human anatomy and create professional rigs	
Animation Understanding Of animation principles & creating professional animation sequences with lighting effects.	
Final Project	

LIST OF TOOLS & EQUIPMENTS

- a) **Hardware**: Animation Light Boards, Pentium IV PCs, (Multimedia Enabled and Windows XP), Scanner, Line Test Device, Printer.
- b) **Software**: Adobe Photoshop CS3, Adobe Flash, Adobe Premiere, Toon Boom, Autodesk Maya 8.5, Sound Forge, Adobe Premier, Coral Draw and latest software if needed.

PRINT PUBLISHING

- 1 Name : PRINT PUBLISHING
 2. Sector : **Information & Communication Technology (ICT)**
 3. Code : **ICT 219**
 4. Entry Qualification : SSC Passed (10th) & having completed the course on computer Fundamentals, MS Office, Internet & soft skills.

5. Terminal Competency: After completion of training, participants would be able to
- Create Designs and Brand material for Advertising & Promotions,
 - Design for Interactive learning systems for online.
 - Create rich visual print layouts.
 - Design visually appealing websites.

6. Duration : 300 hrs

7. Contents given below

Practical Competencies	Underpinning Knowledge(Theory)
Print Design Basics Study Printing technology and uses Design Principles & Color Harmony Introduction to colors – Primary and Secondary in both RGB & CMYK schemes/modes. Importance of each primary and secondary color. Proper Application of colors. Analyze colors applied in different print media. Visualize look and feel of a print or a web to apply colors Typography Study different fonts and typo issues with Web design Layout Design Study Designing standards, Print layout Design and creative visualization for intuitive layouts Computer Graphics Know the difference between Vector Graphics and Raster Graphics. Know the difference between Screen Graphics and Pixel Graphics. Understand the following formats :- .ai,, .pdf, .eps, .svg, .svgz, .psd, .bmp, .gif, .jpg, .pcx, .pct, .png, .raw, .sct, .tga, .tiff, .vst. Digital Illustrations Use features of Corel draw to create artistic	Understanding the Print Industry, Printing technology and uses Understanding Design principles and color theory Understanding the use of various fonts and typo issues with Web design Understanding Designing standards, Print layout Design and creative visualization for intuitive layouts Understanding and using the computer and Operating System

characters and shapes. Creating Illustrations apply different color scheme and formats, Working with Palettes Digital Imaging Working with Images in Photoshop. Working with Palettes, i.e., layers palette, navigator palette, info palette, color palette, Swatches palette, Styles palette, History palette, Actions Palette, Tool preset palette, Channels Palette and Path Palette. Working with Layers. Photo editing. Image adjustment options – Labels, Auto labels, Auto contrasts, Curves, Color balance, Brightness / Contrast, Posterize , Variations. Preparing the file and work area. Creating different shapes. Creating three Dimensional effects using Layers. Working with the magic wand tool and lasso tool. Creating images using Symbol Sprayer Tool. Edit the images using options of Warp Tool. Using Dodge tool, Burn tool, Sponge Tool and Clone Stamp Tool. Editing Selections. Creating images and giving special effects using Filters. Using Layer Styles. Produce an image by mixing two or more different images using Layer Masking & Vector Masking. Print Technology & Print Publishing using Pagemaker Designing layouts for print, integrating media elements on print layouts and saving files for print compatibility	Understanding how images are formed, image file formats and their properties Creating Illustrations for visual media with good understanding of colors and formats Designing for different visual medium and create professional images especially for Print Advertising media Designing layouts for print, integrating media elements on print layouts and saving files for print compatibility
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LIST OF TOOLS & EQUIPMENTS

- a) Hardware: Pentium IV PCs, (Multimedia Enabled, and Windows XP), Scanner, Printer
- b) Software: MS word, Corel Draw12, Adobe Photoshop CS3 and Adobe PageMaker 7.0 and Adobe Dreamweaver

WEB PUBLISHING

1. Name : WEB PUBLISHING
2. Sector : **Information & Communication Technology (ICT)**
3. Code : **ICT 220**
4. Entry Qualification : SSC Passed (10th) & having completed the course on computer Fundamentals, MS Office, Internet & soft skills.
5. Terminal Competency: After completion of training, participants would be able to
 - Able to design interactive Web sites ,
 - Create visually appealing web layouts.
6. Duration : 270 hrs
7. Contents given below

Practical Competencies	Underpinning Knowledge(Theory)
Computer Graphics Know the difference between Vector Graphics and Raster Graphics. Know the difference between Screen Graphics and Pixel Graphics. Understand the following formats :- .ai,, .pdf, .eps, .svg, .svgz, .psd, .bmp, .gif, .jpg, .pcx, .pct, .png, .raw, .sct, .tga, .tiff, .vst.	Understanding how images are formed, image file formats and their properties
Design Principles & Color Harmony Introduction to colors – Primary and Secondary in both RGB & CMYK schemes/modes. Importance of each primary and secondary color. Proper Application of colors. Analyze colors applied in different print media. Visualize look and feel of a print or a web to apply colors	Understanding Design principles and color theory
Web Design Basics Open web pages using URL and domain name. Save web pages. Store web pages as favorites. Use search engines to find sites offering free Email services. Create Email account. Send Email. Copy received Email. Copy/Print received mail. Send Email with attachment. Open/Download attachments. Set-up for Chat. Practice chatting. Practice chatting with Video. Join News group.	Knowledge of Internet, Web design techniques and study of designs as per content
Typography Study different fonts and typo issues with Web design	Understanding the use of various fonts and typo issues with Web design Understanding design issues in Web medium and visualizing intuiting web designs

Digital Imaging Working with Images in Photoshop. Working with Palettes, i.e., layers palette, navigator palette, info palette, color palette, Swatches palette, Styles palette, History palette, Actions Palette, Tool preset palette, Channels Palette and Path Palette. Working with Layers. Photo editing. Image adjustment options – Labels, Auto labels, Auto contrasts, Curves, Color balance, Brightness / Contrast, Posterize , Variations. Preparing the file and work area. Creating different shapes. Creating three Dimensional effects using Layers. Working with the magic wand tool and lasso tool. Creating images using Symbol Sprayer Tool. Edit the images using options of Warp Tool. Using Dodge tool, Burn tool, Sponge Tool and Clone Stamp Tool. Editing Selections. Creating images and giving special effects using Filters. Using Layer Styles. Produce an image by mixing two or more different images using Layer Masking & Vector Masking. Web Publishing using Dreamweaver Design Professional Web Layouts, Author and Publish websites on the internet	Design Professional Web Layouts, Author and Publish websites on the internet using Dreamweaver
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LIST OF TOOLS & EQUIPMENTS

- a) Hardware: Pentium IV PCs, (Multimedia Enabled, and Windows XP), Scanner, Printer
- b) Software: MS word, Corel Draw12, Adobe Photoshop CS3 and Adobe PageMaker 7.0 and Adobe Dreamweaver

ADVANCED WEB PUBLISHING

- 1 Name : ADVANCED WEB PUBLISHING
2. Sector : **Information & Communication Technology (ICT)**
3. Code : **ICT 326**
4. Entry Qualification : SSC Passed (10th) & having completed the course on Web Publishing (ICT220)
5. Terminal Competency: After completion of training, participants would be able to
- Able to design interactive Web sites ,
 - Create visually appealing web layouts .
 - Apply basic programming skills to create dynamic websites
6. Duration : 300hrs
7. Contents given below

Practical Competencies	Underpinning Knowledge(Theory)
Javascripting Creating scripts for Web for Dynamic websites ASP Using ASP to create dynamic web pages enabled with forms and database usage Web Design Basics Getting connected using FTP. Down loading software's. Upgrading Browser versions. Using Telnet to get connected to remote computer. Web Design in Flash with scripting About Flash and General overview – Stage and Work area of Flash, using guides, grid & rulers. Using frames and key frames, Working with time line. Using layers ,Using Guide layers. Drawing in Flash tooling colors in Flash, to use a gradient fill. Importing Artwork, Video and Audio. Different file formats in Video & Audio. Flash Compatible Audio & Video file formats Create interactive animations for learning medium Programming simple interactive applications using Action Scripting Creating Banners, Logo Animation, simple 2D animation content used in Web and E-learning medium Web Layout Design Standards Study design issues in Web medium and visualizing intuiting web designs	Creating scripts for Web for Dynamic websites Using ASP to create dynamic web pages enabled with forms and database usage Knowledge of Internet, Web design techniques and study of designs as per content Create interactive animations and applications for web using Flash

HTML Working with HTML tags. Working with Fonts, colors, Hyper text Links. Develop Unordered Lists, Develop Ordered Lists. Develop Definition Lists , Write different types of Marquee effects. Develop HTML Pages using Tables. Develop User registration forms. Develop Web pages using Forms (Multi pages). Open pages in parent windows. Use Embed tag to insert Media. Insert flash file safe mode.. Play Audio and Video files for specific time. Hide controls on web page. Set different colors to different Headings. Change paragraph font size and color using styles. DHTML Working with DHTML Programming	Basic programming in HTML and creating simple web designs Basic programming in DHTML and creating simple web designs
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LIST OF TOOLS & EQUIPMENTS

- a) Hardware: Pentium IV PCs, (Multimedia Enabled, and Windows XP), Scanner, Printer
- b) Software: MS word, Corel Draw12, Adobe Photoshop CS3 and Adobe PageMaker 7.0 and Adobe Dreamweaver

UNIX(R) ESSENTIALS FEATURING THE SOLARIS(TM)10 OPERATING SYSTEM

1. NAME : Unix(R) Essentials Featuring The Solaris(Tm) 10 Operating System.
2. SECTOR : **Information & Communication technology (ICT)**
3. CODE : **ICT 221**
4. Entry Qualification : SSC pass(10th) & having completed the course on Computer fundamentals, MS Office, Internet & soft skills
5. Terminal Competency: After Completion of the training participants would be:
 - Use command-line features , help resources ,
 - Manage and view files and directories ,
 - Change the directory contents .
 - Create and modify files and use basic file permissions.
 - Create ACLs Control the user work environment
 - Use commands within the shell.
 - Perform basic process and job control ,
 - Archive files and create archives
 - Compress, view, uncompress files
 - Perform remote file transfers.
6. Duration : 300hrs
7. Course Content :

Practical Competencies	Underpinning Knowledge (Theory)
Module 1 - Using the Desktop in the Solaris 10 Operating System Describe the Solaris OS Describe the hardware components of a computer Describe the Solaris OS components Describe the SunOS(TM) operating system Installation of SunOS™ Operating system Log in to the system Use the desktop environment	Introduction to Solaris 10 Operating System Command-Line Features and Online Help Resources Viewing Directories and Files. Memory Management. Hierarchical structure of Files and Directories Fundamentals of vi editor. Working with Shell Editor .
Module 2 - Using Command-Line Features and Online Help Resources Construct and execute commands from the command line Use online documentation.	Apply privileges(File Permissions). Describe ACLs Describe Solaris OS processes Advanced Shell programming (Shell Scripts).
Module 3 - Viewing Directories and Files Work with directories, files, Print files	Resource management in network system.

Module 4 - Changing the Solaris OS Directory Contents Copy files and directories Move and rename files and directories Create files and directories Remove files and directories Use symbolic links	Performing Remote Connections and File Transfers.
Module 5 - Using the vi Editor Describe the fundamentals of the vi editor Modify files by using the vi editor	
Module 6 - Using Commands Within the Shell Use shell metacharacters Describe the Korn shell variables Display the command history Redirect commands Describe the command-line interpreter Work with user initialization files	
Module 7 - Using Basic File Permissions View file and directory permissions Determine file or directory access Change the permissions Modify the default permissions	
Module 8 - Configure Access Control Lists (ACLs) Configure ACLs by using the command line Configure ACLs using the File Manager graphical user interface (GUI)	
Module 9 - Searching Files and Directories Search for content in files Search for files and directories	
Module 10 - Performing Basic Process Control Describe Solaris OS processes View a process Search for a specific process Send a signal to a process	
Module 11 - Advanced Shell Functionality Manage jobs in the Korn shell Describe the Korn shell alias utility Use Korn shell functions Set Korn shell options	

Module 12 - Reading Shell Scripts

Describe shell scripts

Run shell scripts

Pass values to shell scripts

Use the test command

Perform conditional commands

Module 13 – Creating Archives

Archive files

Compress and archive files by using the jar command

Module 14 - Compressing, Viewing, and Uncompressing Files

Compress files by using the compress command

View compressed files by using the cat command

Uncompress files by using the uncompress command

Compress a file with the zip command

View files by using the cat command

Compress and archive multiple files with the zip command

Module 15 - Performing Remote Connections and File Transfers

Establish a remote login session

Copy files or directories to and from another system

Transfer files between systems

LIST OF TOOLS & EQUIPMENTS**1). Centre Server Configuration**

Intel P IV 2.0 GHz , Intel Celeron 2.0 Ghz or AMD Athlon 2000 or above

a)GB RAM ideal

b) 80 GB Ultra SCSI-3 / SATA hard disk

c) Windows 2003 Standard Server with CAL Licenses

d) Anti Virus Program

2).Centre Workstation Configuration

Intel P IV 1.3 GHz , Intel Celeron 1.3 Ghz or AMD Athlon 1300 or above with
40 GB IDE / EIDE Hard disk

512 MB DDR RAM

10/100 BaseT PCI Ethernet

Sound Card

2 Serial, 1 Parallel, 2 Universal Serial Bus ports

101/104 PS2 Keyboard

Three Button Mouse

Headphones

14 “ SVGA Monitor or above

Anti Virus Program

Centre Networking

CAT-5 Structured Cabling with RJ-45 connectors

Patch Cables

- 3) A telephone line for Internet Purpose (Dial up Connection)
Internet account from Local internet service provider
56 KBPS Dialup modem
- 4) Server Peripherals
Flat bed Scanner with at least 600 dpi resolution and LaserJet /Inkjet Printer
CD writer , DAT drive OR Zip Drive OR External hard disk for backup
Web cam, Software Tools, Tools for Hands-on sessions
- 5).Software: Windows XP Licensed Versions of MS Office XP or OpenOffice.org
Microsoft MSN Messenger or Yahoo Messenger.
Web Browser (Internet Explorer version 6.0 or above)
Solaris operating system

SYSTEM ADMINISTRATION FOR THE SOLARIS™(10) OPERATING SYSTEM

1. NAME : System Administration For The Solaris(Tm) 10 Operating System.
- 2.SECTOR : Information & Communication technology (ICT)
- 3.CODE : **ICT 328**
- 4.Entry Qualification : SSC passed (10th) & having completed course on UNIX(R) essentials featuring Solaris™10 operating system (ICT221)
- 5.Terminal Competency : After Completion of the training participants would be
 - Manage file systems
 - Perform system boot procedures
 - Perform user and security administration
 - Manage network printers and system processes
 - Perform system backups and restores
- 6.Duration :120hrs
- 7.Course Content :

Practical Competencies	Underpinning Knowledge(Theory)
Module 1: Installing the Solaris 10 Operating System	Introduction to Solaris 10 OS Directory Hierarchy and File management Memory management , Managing local disk devices Managing Solaris OS File Syatem,Mounts and Unmounts Fundamentals of package administration Fundamentals of patch administration, Install & remove patches PROM fundamentals & commands NVRAM memory Parameters from shell Interrupt & unresponsive system Boot and Shutdown Procedures User administration System System security configuring & using Printer services. Controlling system processes File system backup and restores
Module 2: Introducing the Solaris 10 OS Directory Hierarchy	
Module 3: Managing Local Disk Devices	
Module 4: Managing File System	
Module 5: Performing Mounts & Unmounts	
Module 6: Performing Package Administration	
Module 7: Managing Software Patches on the Solaris 10	
Module 8: Executing Boot PROM Commands	
Module 9 : Performing Boot & Shutdown procedures	
Module 10 : Performing user Administration	
Module 11 : Performing System Security	
Module 12 : Configuring & using Printer Services	
Module 13: Controlling System Processes	
Module 14: Performing File System Backup & Restores	
Module 15 : Backing up a mounted File System with a UP Snapshot	

LIST OF TOOLS & EQUIPMENTS

- 1). Centre Server Configuration
Intel P IV 2.0 GHz , Intel Celeron 2.0 Ghz or AMD Athlon 2000 or above
a)GB RAM ideal
b) 80 GB Ultra SCSI-3 / SATA hard disk
c) Windows 2003 Standard Server with CAL Licenses
d) Anti Virus Program
- 2).Centre Workstation Configuration
Intel P IV 1.3 GHz , Intel Celeron 1.3 Ghz or AMD Athlon 1300 or above with
40 GB IDE / EIDE Hard disk
512 MB DDR RAM
10/100 BaseT PCI Ethernet
Sound Card
2 Serial, 1 Parallel, 2 Universal Serial Bus ports
101/104 PS2 Keyboard
Three Button Mouse
Headphones
14 " SVGA Monitor or above
Anti Virus Program
Centre Networking
CAT-5 Structured Cabling with RJ-45 connectors
Patch Cables
- 3) A telephone line for Internet Purpose (Dial up Connection)
Internet account from Local internet service provider
56 KBPS Dialup modem
- 4) Server Peripherals
Flat bed Scanner with at least 600 dpi resolution and LaserJet /Inkjet Printer
CD writer , DAT drive OR Zip Drive OR External hard disk for backup
Web cam, Software Tools, Tools for Hands-on sessions
- 5).Software: Windows XP Licensed Versions of MS Office XP or OpenOffice.org
Microsoft MSN Messenger or Yahoo Messenger.
Web Browser (Internet Explorer version 6.0 or above)
Solaris operating system

E-COMMERCE - START AN ONLINE BUSINESS

- 1 Name: **E-Commerce – Start an Online Business.**
 2. Sector: **Information & Communication Technology (ICT).**
 3. Code: **ICT 222**
 4. Entry Qualification: The course is for candidates who are graduates in any Discipline, college drop outs, businessmen who want to Diversify their business online, handicapped people and housewives looking to work from home etc.(12th +ICT101) Basic Knowledge of computer.
 5. Terminal Competency: After completion of the training, participants would be able to enable entrepreneurs to start and successfully run an online business and will be able to start and successfully run their own online business.
 6. Duration: 60 hours
 7. Contents given below.

Practical Competencies	Underpinning Knowledge(Theory)
Internet Basics: Study of Internet Explorer. Internet Explorer Settings. Study of different web sites ,multilingual language sites	Internet Basics: What is Internet? How Internet works? Types of Internet Browsers and Web pages. Types of different web sites. Cyber Laws, Unicode S/w
Internet Marketing: Surfing of different web sites. Study to create e-mail account. Study of chatting.	Internet Marketing: What is Internet Marketing? What is chatting?
Introduction to e-Bay: Surfing of different web sites and chatting. Practical related with e-bay.	Introduction to e-Bay: What is e-bay?
Basic modules (Sell side). Surfing of different web sites and chatting. Practical related with Basic modules (Sell side).	Basic modules (Sell side). Types of basic modules.
Advanced Modules (Sell side). Surfing of different web sites and chatting. Practical related with Advanced Modules (Sell side).	Advanced Modules (Sell side). Types of advanced modules.
International Selling Module (Sell Side). Creating and marketing an online shop / store.	International Selling Module (Sell Side). What is international selling?

LIST OF TOOLS & EQUIPMENT:

- **Hardware:**

5. Server Computer (Latest configuration)
6. Multimedia Nodes (Pre-loaded Windows 2000 or latest)
7. Inkjet/Laser Printer
8. UPS

- **Software:**

5. Windows 2000
6. Microsoft Office 2003 Professional
7. Anti Virus Software (TVD/ Norton/Any popular brand)
8. Internet connection

LINUX OPERATING SYSTEM

- 1 Name: **Linux Operating System.**
 2. Sector: **Information & Communication Technology (ICT)**
 3. Code: **ICT 223**
 4. Entry Qualification: Std. Xth pass having completed Course on Computer Fundamentals, MS Word, Internet& Soft skills
 5. Terminal Competency: After completion of the training, participants would be able to know:
 • The fundamentals of Linux Operating System.
 • The design architecture, command structures & utilities of the Linux Operating System.
 • The working of Linux Operating system for Networking and Programming.
 6. Duration: 90 Hours.
 7. Contents given below.

Practical Competencies	Underpinning Knowledge(Theory)
Linux Fundamentals: Working of Linux Operating System in Text Mode and Graphics Mode. Study of files and directories of the operating system. Linux Basic and Advanced Commands. Creating file using Vi-editor, editing, saving file & quit from Vi editor.	Linux Fundamentals: Basics of Unix & Linux, Multi-user & Multitasking capabilities of Linux, change of password, the file types, structures of file system, and important directories of the file system.
Introduction to Shell Programming: Study of different run levels. Shell Programming-I Shell Programming -II.	Introduction to Shell Programming: What is Shell? Tools for working with Linux & Shell Programming. Function of a Shell, access permissions of file in Linux, editing files with Vi. Important commands related to Vi editor. Introduction to Bash Shell basics, Shell. Bash variables, basics scripts element (input/output), and simple Shell programs.
Networking and LAN commands: Study of KDE environment. Networking concepts and LAN commands. Introduction to administrative command like Create Users, Mapping, Assigning, etc.	Networking and LAN commands: Network Concept and classification; Local Area Network (LAN): LAN Topology, LAN Software / Operating System, LAN commands and elementary Administrative commands like ATTACH, BROADCAST, CAPTURE, LOGIN, LOGOUT, MAP, REVOKE, RIGHTS, SYSCON, SYSTIME.

LIST OF TOOLS & EQUIPMENT:

- Hardware:
 1. Server Computer (Latest configuration)
 2. Multimedia Nodes (Pre-loaded Windows 2000 or latest)
 3. Inkjet/Laser Printer
 4. UPS
- Software:
 1. Windows 2000
 2. Microsoft Office 2003 Professional
 3. Anti Virus Software (TVD/ Norton/Any popular brand)
 4. Internet connection

FUNDAMENTALS OF THE JAVA (TM) PROGRAMMING LANGUAGE – SL110

- 1 Name : FUNDAMENTALS OF THE JAVA (TM) PROGRAMMING LANGUAGE – SL110
2. Sector : **Information & Communication Technology (ICT)**
3. Code : **ICT 112**
4. Entry Qualification : HSC pass.(12th Std.)
5. Terminal Competency: After completion of training, participants would be able to Demonstrate knowledge of JAVA technology, The JAVA programming language, and the product life cycle. Use various JAVA programming language constructs creates several JAVA technology applications. Use decisions & looping constructs & methods to dictate program flow. Implement intermediate JAVA technology programming & object oriented concepts in JAVA technology programs.
6. Duration : 300 Hrs

8. Contents given below

Practical Competencies	Underpinning Knowledge(Theory)
<u>A First simple program</u> • Use of syntax of variables & define variables • Data types • Operators • Class,Functions,Structures • Compile & execute program <u>Key Concepts</u> • Key Concepts of JAVA Programming <u>Object Oriented Programming</u> • Object oriented analysis <u>Short program using data types, variables</u> • Declare, initialize & use variables & constants according to JAVA programming, • coding standards • Programs by using operators <u>Program by type casting & promotion</u> • Promotion & type casting • Object reference variables in relation to primitive variables <u>Relational & conditional operators</u> • Program development using relational & conditional operators <u>Control statements</u> • Program by using if & if else constructs • Switch constructs • Programs using loops	<u>Object oriented programming</u> Identify four components programming in the JAVA programming language <u>Explaining Java technology</u> • Intro. to JAVA • Key concepts of JAVA programming • Three JAVA technology product groups • seven stages of product life cycle • <u>Data types, Variables</u> • Use of syntax of variables & define variables • Data types • Operators <u>Type conversion & casting & promotion</u> • Use promotion • Use type casting • Use type conversion <u>Relational & conditional operators</u> • Identify relational & conditional operators

Arrays

- Program using one dimensional array
- Two dimensional array

Introducing classes

- Design classes from which objects will be created
- Four component of a class run program from the command line
- Program using string class in the JAVA software developer kit (SDK)
- Use the JAVA 2 platform
- Classes in Application programming interface (API)

Introducing methods

- Calling methods
- Declare & invoke a method
- Developing programs using methods
- Use overloaded methods
- Use main method in a test class to run a program from the command line
- Pass arguments to the main method for use in a program

Encapsulation & constructors.

- Implementing Encapsulation & constructors.
- Create constructors to initialize objects

Implementing inheritance

- Program to define & test your use of inheritance
- Implement intermediate
JAVA technology programming & object-oriented
(OO) concepts in JAVA
Technology programs.
- Solve logic problems

Control statements

- If & if/else constructs
- switch constructs
- loop constructs

Arrays

- One dimensional arrays
- Set array values using loop, pass argument
- Two dimensional arrays

Introducing classes

- Classes from which objects will be created
- Declare initiate
- Object reference variables
- Use a class in the JAVA software developers kit (SDK)
- Use the JAVA 2 platform
- Learn classes in API

Introducing methods

- Study of developing & using methods,
- Advantages, declaring, invoking & overloading methods
- Compare objects & static method

Encapsulation & constructors.

- Encapsulation to protect data
- Create constructors to initialize objects

Implementing inheritance

- Define & test your use of inheritance

LIST OF TOOLS & EQUIPMENTS

- 1) Center Server
Intel P IV 2.0 GHz ,Intel Celeron 2.0 Ghz or AMD Athlon 2000 or above
2 GB RAM ideal, 80 GB Ultra SCSI-3 / SATA hard disk
Windows 2003 Standard Server with CAL Licenses
Anti Virus Program
- 2). Center Workstations (Upto xx Nos)
Intel P IV 1.3 GHz , Intel Celeron 1.3 Ghz or AMD Athlon 1300 or above
40 GB IDE / EIDE Hard disk
512 MB DDR RAM , 10/100 BaseT PCI Ethernet,Sound Card
2 Serial, 1 Parallel, 2 Universal Serial Bus ports
101/104 PS2 Keyboard,Three Button Mouse,Headphones
14 “ SVGA Monitor or above, Anti Virus Program, Central Networking
CAT-5 Structured Cabling with RJ-45 connectors, Patch Cables
- 3) Power Back up
- 4) Network Switch, Modem
- 5) Patch Cables and jacks, Peripherals
- 6) Center Workstations are connected to Center Server through Local Area Network via a Switch.
- 7) ISDN / Leased line / Dial-up / Cable / DSL connectivity for communication and internet.
- 8) A telephone line for Internet Purpose (broadband connection with modem)
Internet account from Local internet service provider
- 9) Server Peripherals
Flat bed Scanner with at least 600 dpi resolution
600 dpi resolution LaserJet /Inkjet Printer
CD writer ,DAT drive OR Zip Drive OR External hard disk for backup
Web cam , Software Tools , Tools for Hands-on sessions
- 10)Software :
Operating System: Windows XP
Licensed Versions of MS Office XP or OpenOffice.org
Microsoft MSN Messenger or Yahoo Messenger.
Web Browser (Internet Explorer version 6.0 or above)
Open Solaris operating system
Java SE6 with NetBeans 5.5 and JDK 6

BPO NON-VOICE BUSINESS TRAINING

- 1 Name: BPO Non-Voice Business Training.
 2. Sector: **Information & Communication Technology (ICT).**
 3. Code: **ICT 113**
 4.Entry Qualification: Students pursuing Graduation from any recognized college i.e.12th Std.
 5. Terminal Competency: After completion of the training, participants would be able to get job in any service industry like Airlines / BFSL / ITES.
 6. Duration: 180 Hours
 7. Contents given below.

Practical Competencies	Underpinning Knowledge(Theory)
Practice of: a) past, present & future continuous, perfect simple, perfect continuous tenses, b) affixes, active to passive, comparative & superlative adjectives and adverbs c) Phrasal and modal verbs, singular and plural nouns, direct to indirect speech Recognize and produce, compound and complex sentences, quantifiers.	- Detailed knowledge and usage of a) past, present & future continuous, perfect simple, perfect continuous tenses, b) affixes, active to passive, comparative & superlative adjectives and adverbs c) Phrasal and modal verbs, singular and plural nouns, direct to indirect speech Recognize and produce, compound and complex sentences, quantifiers. d) Common grammatical errors.
Letter writing and Email: - Microsoft Word & Letter writing practice. - Email ID creation. - Sending letters by email.	- Business writing etiquette emails, letters. - Understanding and responding to mails from customers and team members using appropriate Formats. - Common email and letter writing errors.
Team Work: Do's and don'ts while working in a team.	Principles of Team work Do's and don'ts while working in a team.
- Reading and Interpreting/Analyzing data and forms - Spotting trends / issues. - Creating MIS. - Problem Solving Skills.	- Reading and Interpreting/Analyzing data and forms - Spotting trends / issues. - Creating MIS. - Problem Solving Skills.
Control and Management: - Learning to keep emotions under control - Time Management - Conflict Management - Stress Tolerance.	Control and Management: Learning to keep emotions under control(Human Psychology, study of Perceptual Images) - Time Management - Conflict Management - Stress Tolerance.
MS Office Intermediate: - Microsoft Word. - Microsoft Excel. - Microsoft Power point. - Microsoft Outlook Express.	MS Office Intermediate: - Microsoft Word. - Microsoft Excel. - Microsoft Power point. - Microsoft Outlook Express.

LIST OF TOOLS & EQUIPMENT:

- **Hardware:**

- 1.Server Computer (Latest configuration)
- 2.Multimedia Nodes (Pre-loaded Windows 2000 or latest)
- 3.Inkjet/Laser Printer
- 4.UPS

- **Software:**

- 1.Windows 2000
- 2.Microsoft Office 2003 Professional
- 3.Anti Virus Software (TVD/ Norton/Any popular brand)
- 4.Internet connection

BPO VOICE BUSINESS TRAINING

- 1 Name: BPO Voice Business Training.
 2. Sector: **Information & Communication Technology (ICT).**
 3. Code: **ICT 114**
 4.EntryQualification: Students pursuing graduation from any Recognized College
 5. Terminal Competency: After completion of the training, participants would be able to get job in any service industry like Airlines / BFSL / ITES.
 6. Duration: 180 hours
 7. Contents given below.

Practical Competencies	Underpinning Knowledge(Theory)
	Life In BPO: • Understand concept of working across time • Keeping health while working in shifts • Managing time • Managing clients, customers & target
Speak Well: a) Grammar and Neutral English. b) Pronunciation. c) Sentence Formation and speech Fluency.	1) Detailed knowledge and usage of • Past, present & future continuous, perfect simple, perfect continuous tenses. • Affixes, active to passive, comparative & superlative adjectives and adverbs. • Phrasal and modal verbs, singular and plural nouns, direct to indirect speech. 2) Recognize and produce compound and complex sentences, quantifiers, appropriate usage of pronunciation, right pronunciation of words commonly used in a contact center. 3) Correction of MTIs and common errors, totochiev errors to achieve neutral spoken English.
Service Well: • Understanding customer service processes and steps for services call. • Listening and understanding customer requirements. • Responding to different customer requirements. • Dealing with difficulties of customers.	• Telephone etiquette • Importance of Customer Service • Understand Customer Service processes and steps for a service call • Listening and understanding customer requirements • Responding to different customer requirements. • Dealing with difficult customers
Speak Well: • Voice & accent practice • Market Survey.	Speak Well: • Questioning Techniques • Selling and Cross Selling techniques based on target audience and situations and types of product.

Dealing with customers: • Importance of collections • Basic steps of a collection call • Managing your emotions • Dealing with challenging customers	Dealing with customers: • Importance of collections • Basic steps of a collection call • Managing your emotions • Dealing with challenging customers
Problem Solving Skill: • Basic data analysis and problem solving skills • Logical reasoning	Problem Solving Skill: • Basic data analysis and problem solving skills • Logical reasoning
Team Work: • Principles of team work • Do's and don'ts while working in a team	Team Work: • Principles of team work • Do's and don'ts while working in a team
Being Professional: • Learning to keep emotions under control • Time management • Conflict management	Being Professional: • Learning to keep emotions under control • Time management • Conflict management
Typing Skill: • Accurate typing of information while listening.	Typing Skill: • Accurate typing of information while listening.

LIST OF TOOLS & EQUIPMENT:

- **Hardware:**

- 1.Server Computer (Latest configuration)
- 2.Multimedia Nodes (Pre-loaded Windows 2000 or latest)
- 3.Inkjet/Laser Printer
- 4.UPS

- **Software:**

- 1.Windows 2000
- 2.Microsoft Office 2003 Professional
- 3.Anti Virus Software (TVD/ Norton/Any popular brand)
- 4.Internet connection

3D VISUALISATION IN ARCHITECTURE

1. **Name :** 3D VISUALISATION IN ARCHITECTURE
2. **Sector :** Information & Communication Technology
3. **Code :** ICT 115
4. **Entry Qualification :** SSC. Passed (10th)
5. **Terminal Competency :** After completion of the training, participants would be able to:
 - Do the work on 3D Production for Architectural Visualization
 - Gain Knowledge of AutoCAD drawing and converting them into 3D visualization
 - Create Intuitive Walkthroughs and Flybys for Architectural assignments.
 - Design 3D Simulations for Architecture Designs & Products.
6. **Duration :** 240 Hours
7. **Contents :** Given below

Practical Competencies	Underpinning Knowledge (Theory)
• Lay out of drawing sheets. Drawing conventional lines. • Free hand sketching of geometrical models. • Printing of single stroke & double stroke lettering • Methods of Perspective and Design Fundamentals. • Coloring & shading, Rendering & Presentation. • General Information and table. • Structural Design, Zooming Regulation • To create an image map area using an image map. • Viewing Image Maps. • Working with Slice tool, Working with Layers in Rollovers & Using the Rollover palette. • Viewing animation in Image ready. • Drafting layout of Architectural Drawing. • Making Inertial part of drawing • Sectional View of Layout. • Convert AutoCAD files to 3DX Max format.	Drawing Basics • Drawing instruments, equipments and materials their use, care & maintenance, safety precautions. Code of practice for general and architectural drawings. • Importance of lettering and figures sizes, proportion etc. Perspectives and Design Fundamentals ○ Technical relation with Perspectives and Design Fundamentals. ○ Rules & Classification of Perspectives and Design Fundamentals. Architecture Design Walkthroughs • Rendering & Presentation. • Principal of Planning • Method of Drawing, Rules & regulation • General Information and table. • Rules of Architecture in Designing and approach of planning • Building types, Zooming Regulation. Digital Imaging • Application & usages of Digital Image. • Image Mapping, Viewing Animation.

• Modeling level design for building. • Creating primitive object. • Using the modifier to alter an object's shape. • Creating & editing spline object. • Converting spline into geometry using modifiers. • Setting up viewports with background images. • Editing a model at sub-object levels. • Using Merge and XREF to bring external object. • Generating texture map for real – time application. • Generating texture element and exporting to real – time 3D engine & rendering it. • Using architectural material on the wall. • Creating a scene is in interiors & exterior design with the help of fly camera & save it. • Calculating required no. of frames. • Creating a free & Target camera. • Adjusting animation length for suitable camera motion. • Applying a path constraint to camera. • Using set key to animate the camera target. • Lighting a space. E.g. (Interior living room space.) • Setup the scene. • Adding a light with a preset value to the entryway. • Positioning the light & fixture assemblies. • Adding default light to the scene. • Project.	AutoCAD • Introduction & Applications of Auto-Cad. • UCS Co-ordination System. • Shortcut keys, Function keys. Modeling • Introduction of Modeling. • Features of Modeling. • Modifiers – Bend Modifier, Extrude, HSDS (Hierarchical subdivision surface), and Surface vertex weld Modifier. Texturing • Different types of Texture. • Render to texture tool. • Various scene elements into texture. Walkthrough • Scene – Built a 3D environment with material, light and cameras. Path Constraints. • Animation length, Auto key. Lighting • Uses of Lighting, Types of light – • Categories of lighting situation.
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LIST OF TOOLS & EQUIPMENTS

1. Hardware: Pentium IV PCs with 1 GB RAM, (Multimedia Enabled, and Windows XP), NVIDIA GeForce 7300 GT
2. Software: Adobe Photoshop CS3, Autodesk 3DSMax 9.0, SoundForge, Adobe Premiere.

ARCHITECTURAL AND CIVIL 2D DRAFTING WITH AUTOCAD

- 1. Name :** ARCHITECTURAL AND CIVIL 2D DRAFTING WITH AUTOCAD
- 2. Sector :** **Information & Communication Technology**
- 3. Code :** **ICT 116**
- 4. Entry Qualification :** SSC Passed (10th)
- 5. Terminal Competency :** After completion of the training, participants would be able to:
Do the work on 2D Engineering drafting for Architectural Visualization
To apply this knowledge to understand the engineering design work flow
Process in the Industry
Acquire knowledge of basic 3D modeling concepts.
- 6 Duration :** 300 Hrs
- 7. Contents :** Given below

Practical Competencies	Underpinning Knowledge (Theory)
• Practise on Drawing basics • Geometrical Drawing Practise • Making plan of Projection. • Creation Multi-view Orthographic projection. • Drafting views in First angle & Third angle Projection. • Creating Auxiliary views & Sections. • Freehand Sketching. • Representing Standard base 2D drafting. • Drawing Elementary CADD command – Line, Polyline, Polygon, Circle, Polyline, arc, ellipse, Text- Single Text, Multitext, Dtext. • Modifying Elementary Commands – Erase, Move, Copy, Mirror, Offset, Scale, Stretch, Chamfer, fillet & explode. • Making layers, line type & Lineweight. • Different menus of Auto-Cad, Function keys, Shortcut keys, Paper size. • Making Title Block, Writing it & inserting it in any drawing file with scale, angle & explode options. • Creating a new template file (.Dwt file) & applying it to every drawing file. • Drafting of building plan, Elevation, Section Views.	Introduction • Principle of drafting, Terminology, & fundamentals. • Size & shape descriptions. • Geometric Construction. Views • Plan views, Auxiliary views, Section Views. Projection • Method of Projection. • Multi-view Orthographic Projection. • Projection Techniques. Modeling • Modeling Fundamental for Engineering design • Shape Modeling and its application. CADD • Introduction of CADD (Computer Aided Drafting & Designing). • Function keys, Shortcut keys, • Different sizes of paper. • Application of CADD – Automatic Drafting, Geometric Modeling • Geometric Modeling – Wire frame Modeling, Surface Modeling, and Solid Modeling.

• Applying dimensions to various views by using dimension style. • Creating Revolved, Ruled, and Tabulated & Edge surfaces. • Creating Isometric drawing with the Isoplane (Left, Top & Right Plane) Shaded it from visual style. • Making Solid Model – Box, Polysolid, Cylinder, Cone, Pyramid, Wedge, Torus. • Project – Site Visit Building Drawing Plan. Building Detailing. Building Model.	• CADD Application & it's feature • Introduction to Standard based 2D drafting (Based on International standard for representation & conformation) 3D Design • Concept of 3D Design. • X, Y, Z Co-ordination System. Documentation • Manufacturing Process & Material Documentation.
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LIST OF TOOLS & EQUIPMENTS

1. Hardware : 20 Workstations of suitable configuration

2. Software : 20 licenses AutoCAD software

**MECHANICAL DRAFTING & MODELING WITH AUTODESK INVENTOR (INCLUDES
AUTOCAD)**

- 1. Name** : MECHANICAL DRAFTING & MODELING WITH
AUTODESK INVENTOR (INCLUDES AUTOCAD)
- 2. Sector** : **Information & Communication Technology**
- 3. Code** : **ICT 224**
- 4. Entry Qualification** : **SSC Passed (10th) & Any MES course Of Production & manufacturing sector**
- 5. Terminal Competency** : After completion of the training, participants would be able to:
- Do the work on Mechanical 3D Modeling & design.
 - Apply this knowledge to understand the engineering design work flow process in the Manufacturing Industry.
 - Acquire knowledge of 3D design visualization.
- 6. Duration** : 300 Hrs
- 7. Contents** : Given below

Practical Competencies	Underpinning Knowledge (Theory)
Introduction to AutoCAD • Introduction of AutoCAD Window dialog box, Menu bars, toolbars, Command window. • Drawing & Modifying CADD (Computer Aided Drafting & Designing) commands. Introduction to 2D Drafting • Draw Commands – Line, Circle, Rectangle, Ellipse, Polygon, Point, Region. • Make a block, write it & then insert it in any file. • Putting a single & multiple texts in a drawing. • Modifying commands – Erase, copy, mirror, offset, array, scale, stretch, trim & Extend. • Chamfering & filleting corner of drawing. • Modifying the sketch grid spacing. • Create parametric dimension. • Delete & Add Dimensions.	Introduction to AutoCAD • Introduction of AutoCAD Window dialog box, Menu bars, toolbars, Command window. • UCS Co-ordination System – X,Y & Z Co-ordination. • Units, Drawing limits, Grids. • Function keys, Paper size & shortcut keys. Introduction to 2D Drafting • Draw Commands – Line, Circle, Rectangle, Ellipse, Polygon, Point, Region. • Modifying commands – Erase, copy, mirror, offset, array, scale, stretch, trim & Extend. • Layers, Linetype, color & line weight. • Dimension menu commands. • Template file, Title block. Introduction to 3D • Introduction to 3D Modeling. X Y, Z plane, 3D Grips & other tools on the 3D sketch

Introduction to 3D • Sketch 3D line on X, Y & Z planes. • Creating work axis & work points. • Modifying the work feature. Modeling • Solid Modeling –Extrude sketch geometry, Sweep geometry along a path, revolve sketch geometry, Coil feature, Rib & Web feature. • Create hole feature on part, Create a shell feature with varying thickness. • Add chamfer & edge fillet feature to a part. • Surface Modeling – Create a curved surface, Revolved surface, Ruled Surface, Edge Surface. • Creating 3D Solid drawing with template, using Title block, Detailing & Section view. • Apply material, background, light – Point, Distance, Spot light, landscaping. • Making slide & running run script file. • Creating view ports & views & plotting it. • Creating a flat & flange wall in sheet metal modeling. • Constraining component by mating plane faces. • Creating assembly components in place. • Creating component pattern. • Copying & mirroring assembly. • Making exploded assemblies - Making detail drawing of Machine drawing, dismantling machine component. Adaptive Assemblies. • Project- e.g. Universal coupling.	panel bar. Drawing environment- Paper space & Model space. Boolean Operation • Subtract, Union, & Intersect. Dimension • Dimensional and geometric constraints. Parametric dimension – Automatic dimension. (Linear, aligned, angular Baseline, Continue, Tolerance, Leader.) Solid Modeling • Box, Polysolid, Cone, Pyramid, Wedge, Torus. • Solid Editing commands – Union, Subtract, and Intersect. • 3D modifies commands – 3D Mirror, Rotate 3D, Array 3D, Align the object. Surface Modeling • Create a curved surface, Revolved surface, Ruled Surface, Edge Surface, and Tabulated Surface. • 2D solid, Edge, 3D face, 3D Mesh. Assembly Modeling • Assembly co-ordination system Position Constraints Place & constraint component, Edit constraint. Adaptive work plane • Defining work plane - XY, YZ, XZ plane. • Work axis. • Work point.
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LIST OF TOOLS & EQUIPMENTS

1. Hardware: 20 workstations of suitable configuration

2. Software : 20 licenses of Autodesk Inventor software

ARCHITECTURAL DRAFTING AND 3D DESIGN WITH AUTODESK REVIT

1. Name : ARCHITECTURAL DRAFTING AND 3D DESIGN
WITH AUTODESK REVIT.
2. Sector : Information & Communication Technology
3. Code : ICT 225
4. Entry Qualification : **SSC Passed (10th) and having completed Course in Architecture & civil 2D drafting with AutoCAD.**
5. Terminal Competency After completion of the training, participants would be able to:
- Apply this knowledge to understand the Architectural design work flow process in the industry.
 - To acquire knowledge of advanced 3D modeling concept.
 - Prepare working drawing of different types of designing building by Autodesk
6. Duration : 200 Hours
7. Contents

Practical Competencies	Underpinning Knowledge (Theory)
• Preparing Architectural working drawing • Representing Standard base 2D drafting • Planning, designing & measuring of drawing • Drawing Elementary CADD command - Line, Polyline, Polygon, Circle, Polyline, arc, ellipse, Text- Single Text, Multitext, Dtext • Modifying Elementary Commands - Erase, Move, Copy, Mirror, Offset, Scale, Stretch, Chamfer, fillet & explode • Making layers, line type & Line weight • Preparing of the color drawing • Preparing utilization of architectural working drawing • Practice on 3D drawing & designing • Rendering of 3D model (Light, Material & Landscaping) • Purpose & presentation of working drawing	Architecture Drafting & Design I • Introduction to the preparation of architectural working drawing • Drawing convention. • Design consideration. • Different types of Architectural drawing. • Construction technique - Residential construction & commercial building. • Introduction & Applications of Auto-Cad, • UCS Co-ordination System. • Shortcut keys, Function keys.

with building course. • Structural designing • Construction detail of commercial & Industrial building • Applying skill & presentation technique to the Architectural Project • Project -e.g.Case study & measuring of hotel suit Detailing of Construction Drawing Designing of related Project Detail layout plan Sectional elevation Perspective view Electrical planning & other furnishing details.	Architecture Drafting & Design II • Methods of utilized in the preparation of architectural working drawing. • Advanced drawing convention. • Advanced Design consideration. • Structural requirements. • Analysis of the Material& construction details of commercial & Industrial building Architecture Design theory. • Introduction to the creative thinking process & its application to basic Architectural design theory. • Basic skill & presentation technique use in the design of simplifies architectural Project. • Focus on the investigation theoretical concept, color, space form & texture in emphasized
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LIST OF TOOLS & EQUIPMENTS

1. Hardware: 20 workstations of suitable configuration

2. Software : 20 licenses of Autodesk REVIT software

ADVANCE ARCHITECTURAL DRAFTING AND 3D DESIGN WITH AUTODESK REVIT

1. Name ADVANCE ARCHITECTURE 3D DESIGN WITH AUTODESK REVIT
2. Sector Information & Communication Technology
3. Code ICT 328
4. Entry Qualification SSC passed (10th) and having completed course in Architecture drafting and 3D design with Auto Desk Revit
5. Terminal Competency: After completion of the training, participants would be able to:
 - Apply this knowledge to understand the architectural design work flow process in the industry.
 - To acquire knowledge in advanced 3D architectural modeling Concept
 - Prepare working drawing of different types of designing building by Autodesk
6. Duration 200 Hours

7. Contents

Practical Competencies	Underpinning Knowledge (Theory)
• Production of parametric three-dimensional building design models & working drawing using Revit software • Generating building elevation and sections • Annotating & documenting the drawing • Surface modeling–Revolved , Ruled, Tabulated & Edge surfaces. • Solid modeling Box , Polysolid , Cone ,	Advanced Architecture Design • Fundamental of creating,& modifying three dimensional topography & building mass object • Parametric building wall with floor & roof slabs • Creating floor & reflected ceiling plans • Function of Revit • Fundamentals of creating,& modifying

Pyramid ,Wedge & Torus • Creating professional quality rendering • Creating & modifying three - dimensional objects • Placing of cameras & lights • Computer rendering technique • Creating professional quality output Applying light (point, distance & spot light) to 3 D Model Applying material & landscaping to the model • Showing exteriors & interiors in the correct setting with appropriate lighting & coloring • Hands- on-exercises will be used to reinforce • Practice on 3 D drawing & designing • Structural designing • Electrical plumbing layout design & drafting • Project: e.g. Commercial building 3 D grid modeling of a Ship , bridge	three dimensional objects • Creation & application of materials Introduction of Structure drafting and MEP • Structural requirements • Analysis of the Material & construction details of commercial & Industrial building • Electrical plumbing layout design & drafting
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LIST OF TOOLS & EQUIPMENTS

1. Hardware: 20 workstations of suitable configuration

2. Software : 20 licenses of Autodesk REVIT software

List of Trade Committee members of ICT Sector

1. Rajiv Mathur	CMC	rajiv.mathur@cmcltd.com
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20. Principal ITI	Aundh, Maharashtra	itiaundh1109@yahoo.co.in

LIST OF TRADE COMMITTEE MEMBERS FOR ANIMATION & MULTIMEDIA COURSES

Sl No	Name S/Sh	Designation
1	A S Kesai	Regional Director, RDAT, Mumbai
1	Bhosale Madhukar	Director, Disha Education, Mumbai
2	Kadam Prashant	Executive Sales, Auto Desk
3	Agaskar	Local Expert, Ex-IIT, Mumbai
4	Dhygude	Local Expert, Ex-IIT, Mumbai
5	D K Pawagi	Dy Director of Trg, RDAT, Mumbai
6	K D Shinde	Principal, ITI, Thane
7	I R Bhilegaonkar	AAA, DVET, Mumbai
8	Smt Sushma Bhalekar	Training Officer, ITI, Ambernath
9	Smt Arti Pabrekar	G I, ITI, Thane (E)
10	A V Kondkar	G I, ITI, Thane (W)
11	S S Mane	G I, I T I, Thane (W)
12	V G pate	G I, I T I, Thane (W)
13	G V Joshi	Instructor, COE (IT)

Level-I

1. Course Behavioral Basics

2. Sector: ICT

3. Code: ICT129

4. Minimum Educational: 10th Passed
Qualification

5. Age: 14 years Minimum

6. Competency After completion of the course participant will be able to

- 1 Keeping the self in focus with a clear objective of developing generic skills
- 2 To enhance the capabilities in the fields of searching, assimilating and using information on the job,
- 3 Developing self and managing given tasks as a techno-manger.

7. Duration 90 Hours

8. Content

<u>Practical</u>	<u>Under pinning Knowledge</u>
<u>Demonstration on various Information source presently used</u> Presentation on preparation of cards Demonstration on identifying skills-General & specific , process of performing job,workplace system etc in simulated environment Demonstration on process for skill analysis Demonstration on Communication, Body language etc in simulated environment Practice on Communication	Information Sources Introduction , Types of Information Sources, Print media, Documentary sources Non-Documentary sources, Non-print media, Electronic media, Conclusion. Information Centre Introduction, Classification, Services, Conclusion. Procedure for Information Search Introduction, Need of approach, Types of approach, Steps for Information search ,Preparation of biographic card, Preparation of index card, Conclusion. Learning Introduction, Concept of learning, Basic model of Learning, Principles of learning, Conclusion. Memory of Cognition Introduction, Basic concepts, Dual store model of memory, Sensory register characteristics, Attention: Factors affecting attention, Figure ground rule, Working memory (WM) : Characteristics of WM, Control processes in WM, Long term memory (LTM) : Characteristics of LTM, Control processes in LTM, Organization of Knowledge, Conclusion. Meta Cognition & Study Stratifies Introduction, Meta cognitive knowledge & skills, Self regulated learning, Effective learning & study strategies (Covert) : Selective attention, Maintain Rehearsal, Meaningful learning reflection, Internal organization, Elaborative ----** Visualization,

	Effective overt learning strategies: Effective reading, Effective listening, Notes taking , Conclusion. Learning on Job Introduction, Definition, Identifying general and specific skills, Work place as a system, Types of system, Conclusion. Learning Practical Skills Introduction, Process of performing the job, Domains of learning job, Conclusion. Testing of Acquired Skills Introduction, Objectives, Process for skill analysis, Conclusion . Basics of Communication Definition, Concept of communication, Communication cycle, Communication, Conclusion. Techniques of Communications Introduction, Oral communication, Written communication, Body language, Conclusion
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Level-II

1. **Course name:** ADVANCE BEHAVIORAL BASICS
2. **Sector:** ICT
3. **Code:** ICT230
4. **Minimum Educational Qualification:** 10Th passed and having completed course on Behavioral Basics
- 5.. **Competency:** After completion of course participant will be able :
 1. To understand the basic building blocks of English & to Recognize and correct the common errors in spoken, written English
 2. To resolve quantitative and qualitative problems mentally
 3. To recognize the importance of personal grooming and Etiquette for corporate life
 4. To enhance his awareness on current affairs and how to stay In touch on a shoestring budget
6. **Duration** 150 Hours
7. **Content**

Practical Skills	Underinining Knowledge
Practise on Pronunciation and sentence construction	Basics of English a) Introduction to basics of English b) Sentence Construction c) Pronunciation
Practise on understanding and solving basic problems	Basics Math and Problem Solving a) Basic Mental Arithmetic practice b) Basics of Problem Solving for Quantitative and Verbal Tests
Tips to ensure you look and feel great Breathing and Stretch Exercises	Personal Grooming a) Importance and Aspects of Personal Grooming b) Basic Relaxation and Stress Techniques
Demonstration on corporate etiquette in simulated environment Visit to a corporate office for better understanding	Corporate Etiquette Interpersonal communication tips – words, and inter personal space Do's and Don'ts of interacting with customers, peers, supervisors and seniors
Practise on various aspects of current affairs	Current Affairs Politics, Society, Sports, Business World, World Economy and Patterns

LEVEL II

1. **Course:** THE JAVA (TM) PROGRAMMING LANGUAGE - SL275(Advance)
2. **Sector:** ICT
3. **Code:** ICT231
4. **Minimum Educational:** 10th Passed +completed the course “Fundamental of the
Qualification JAVA SL110”(ICT112)
5. **Age:** 14 years Minimum
6. **Competency:**

After completion of the course participant will be able to

 1. Create Java technology applications that leverage the object-Oriented features of the Java language, such as encapsulation, inheritance, & polymorphism
 2. Execute a Java technology application from the command line
 3. Use Java data types, expressions and flow control constructs
 4. Use arrays and other data collections
 5. Implement error-handling techniques using exception Handling
 6. Create an event-driven graphical user interface (GUI) using Swing: components: panels, buttons, labels, text fields, and Text areas
 7. Implement input/output (I/O) functionality to read from and Write to data and text files and understand advanced I/O Streams
 8. Create a simple Transmission Control Protocol/Internet Protocol (TCP/IP) networked client that communicates with a server through sockets and multithreaded programs
7. **Duration** **120 Hours**
8. **Content**

Under Pinning Knowledge	Practical
Module 1 - Execute your first Java Application: Prepare and Analyze a simple Java technology application	Execute your first Java Application #Examine the JDK #Execute a Java technology application
Module 2 - Model a Real-World Process with a Java Application Break down a Java technology application	Model a Real-World Process with a Java Application 5 #Create an object and declare a reference to an object type Module 3 - Create a Class: Fields and

into its parts Study the concepts associated with creating, referencing , and using objects Module 3 - Create a Class: Fields and Constructors Syntax Study the concept the of creating class statements, Declaring & Initializing fields and Directorylay out Module 4 - Create a Class: Methods Syntax Module 5 - Create a Class: Encapsulation Module 6 - Create Arrays Declaration & Cration of Arrays , Detemination of number of elements in an array and their Initialization Module 7-Create a Subclass Using Inheritance Concept of inheritance and its Implementation in Java technology Override methods of the object class Concept polymorphism through subclasses Use the instance of operator Cast objects Use of final keyword Module 8 - Error Handling Using Exception Classes and Assertions Define and using and Handling exceptions Describe exception categories Identify common exceptions	Constructors Syntax #Create a class statement #Declare and initialize fields: using defaults, explicit values and constructors #Examine directory layout and packages Module 4-Create a Class: Methods Syntax #Examine method interface and method body #Use simple arithmetic and logical expressions #Create statements, including branch and loop statements #Use advanced method design techniques for: Method Overloading ,Pass-by-Value The this Reference Module 5 - Create a Class: Encapsulation #Examine the concept of encapsulation #Implement encapsulation in Java technology #Use the static keyword Module 6 - Create Arrays #Declare and create arrays of primitive, class, or array types and Initialization of elements of Arays and Initialization # Create a multidimensional array Module 7 - Create a Subclass Using Inheritance 8 #Examine the concept of inheritance #Implement inheritance in Java technology #Override methods of the object class #Create polymorphism through subclasses #Use the instance of operator #Cast objects #Use the final keyword Module 8 - Error Handling Using Exception Classes and Assertions #Develop programs to handle your own
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Distinguish appropriate and inappropriate uses of assertions Module 9 - Declare and Use Specialized Class Types Create abstract methods and abstract classes Declaration and use interfaces Declare and use nested classes Module 10 - Using Generics and the Collections Framework Module 11 - Transfer Data Using I/O Streams and Readers Module 12 - Perform Console I/O and File I/O Describe formatted input and output Read from and write to a file Module 13 - Implement Multi-Tier Applications Using Networking Develop code to set up the network connection Use ServerSocket and Socket classes for implementation of TCP/IP clients and servers Describe URL and URLConnection classes Module 14 - Implement Multi-Threaded Applications	exceptions # Use assertions # Distinguish appropriate and inappropriate uses of assertions #Enable assertions at runtime Module 9 - Declare and Use Specialized Class Types #Create abstract methods and abstract classes #Declare and use interfaces #Declare and use nested classes #Use enumerated types Module 10 -Using Generics and the collections Framework #Write programs that use sets, lists, and mappings #Create natural and custom ordering by implementing the comparable and comparator interfaces #Use generic collections #Examine wildcard parameter types #Write program to iterate over a collection Module 11 - Transfer Data Using I/O Streams and Readers #Write a program that uses command-line arguments and system properties #Construct node processing streams #Serialize and deserialize objects Module 12 - Perform Console I/O and File I/O #Write a program that reads from standard input #Describe formatted input and output #Read from and write to a file Module 13 - Implement Multi-Tier Applications Using Networking #Develop code to set up the network connection #Use ServerSocket and Socket classes for implementation of TCP/IP clients and servers #Describe URL and URLConnection classes Module 14 - Implement Multi-Threaded Applications
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Define a thread Create separate threads in a Java technology program, controlling the code and data that are used by that thread Module 15 - Building Java GUIs Using the Swing API Describe the JFC Swing Technology Describe the GUI building blocks: containers, component & layout managers Describe the swing single threaded model Module 16 - Handling GUI-Generated Events Define events and event handling Describe the concept of adapter classes, including how and when to use them Determine the user action that originated the event from the event object details Identify the appropriate listener interface for a variety of event types Use inner classes and anonymous classes in event handling Understand Swing Worker thread and its effect on the GUI performance	#Create separate threads in a Java technology program, controlling the code and data that are used by that thread #Use wait and notify to communicate between threads #Use synchronized to protect data from corruption Module 15 - Building Java GUIs Using the Swing API 7 # Build a GUI using swing components Module 16 - Handling GUI-Generated Events #Write code to handle events that occur in a GUI #Determine the user action that originated the event from the event object details #Create the appropriate event handler methods for a variety of event types #Use inner classes and anonymous classes in event handling #Understand Swing Worker thread and its effect on the GUI performance
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Level-II

1. Course : SOFTWARE TESTING

2. Sector: ICT

3. Code: ICT232

4. Minimum Educational: 10th Passed +ICT 101 & ICT 112 + Behavioral Basics or
Qualification Soft Skills

5. Age : 14 years Minimum

6. Competency After completion of the course participant will be able to

1. Develop a tester's mindset; have thorough knowledge of static and dynamic validation techniques; write test cases for Unit, Module, Integration and System Testing; Test and Debug programs; Understand the process of Documenting and Closing Defects
2. Develop a good understanding of the process of maintaining software

7. Duration 100 Hours

8. Content

Under Pinning Knowledge	Practicals
1. Testing Fundamentals Static Testing and Dynamic Testing 2. Testing Techniques & Preparation of Test Cases Black-box White-box Test Plans Test Cases 3. Types of Testing Unit Testing Module Testing Integration Testing System Testing Regression Testing 4. Introductions to Tools Win Runner Load Runner 5. Software Maintenance Types of Software Maintenance	Development of Testing Plan Development of Test cases

Characteristics of Maintainable Software Maintenance Process – Handling	
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1. Course: INTERACTIVE MEDIA DESIGN

2. Sector: ICT

3. Code: ICT233

4. Minimum Educational: 10th Passed +ICT101 +

Behavioral Basics or Soft

5. **Qualification** **soft skills**
Age : **14 years Minimum**
6. **Competency:** After completion of the course participant will be able to:
a. Design or Author interactive learning systems for online and electronic media like CDs.
b. Create and organize content in standard Instructional form, for e-learning systems.
c. Visualize and storyboard learning sessions for better performance
7. **Duration:** 240 Hours
8. **Content**

Under Pinning Knowledge	Practical
1. Over view on computer fundamentals and Word Processing	#Understanding and using the computer and Operating System
2. Computer Graphics :Concept	#Word Processing practice and text formatting using simple word processor.
3. Interactive Media Design Standards : Concept	#Understanding how images are formed, image file formats and their properties
4. Digital Illustrations:Using Corel Draw	#Creating Illustrations for Interactive media with good understanding of colors and formats using Corel Draw
5. Digital Imaging :Using Adobe Photo shop	#Basic programming in HTML and creating simple web designs
6. HTML :Concepts	#Simple programming using C
7. Basic Programming with C: Understanding programming basics and concept on C language	#Simple programming using OOPs
8. Object oriented Programming: Using C++	#Creating simple scripts for Web and interactive media
9. Javascript :Concepts	#Good understanding of e-learning standards and

10.E-learning standards:Concepts 11.SCROM concepts :Concepts 12.Adobe Flash :Concept and application 13.Adobe Authorware:Concept &application	related media #Understanding the SCROM compliance issues for E-learning #Create interactive animations and applications using Flash #Create Interactive Applications and E-learning modules
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1. **Course Name :** **CHARACTER ANIMATION**
2. **Sector:** **Information & Communication Technology**
3. **Code:** **ICT234**
4. **Entry Qualification:** **SSC Passed & Having completed course on**

Behavioural Basics or Soft Skills

5. Terminal Competencies:
 - a Gain knowledge of Animation production process & apply this knowledge to understand the work instructions from related animation function.
 - b.Learn 3D Concepts & Principles of Animation.
 - c.Create High Quality animation using specific instructions
 - d.Acquire strong understanding of Classical Animation Principles and apply them to 3D Character Animation.
6. Duration 300 Hrs
7. Course Content

<i>Practical Competencies</i>	<i>Underpinning Knowledge (Theory)</i>
Drawing Basics -Forms & Shapes:To be able to draw basic forms and shapes Design Fundamentals, Perspective Drawing, Shading & Shadows Sketching for Animation (Stick Figures & Thumbnails Drawing Human Figures:-Drawing realistic human figures & Imagination Digital Imaging: Designing images for textures Modeling: Create professional models for	Theory related to Practical

animation production Texturing: Create textures for characters and Backgrounds Rigging: Understanding human anatomy and create professional rigs Animation: Strong understanding of Animation principles and creating professional animation sequences Lighting: Lighting up the animated sequences for broadcast Project work	
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1. Course Name: **Clean-Up for 2D Animation**
2. Sector : Information & Communication Technology
3. Code: **ICT235**
4. Entry Qualification: SSC Passed & Having completed course on Behavioural Basics or Soft Skills
5. Terminal Competencies
 - a. Gain knowledge in 2D animation production process & apply this knowledge to understand the work instructions from related animation function
 - b. Apply Clean Up to “Inbetweens and Keyframes”
 - c. Apply concepts of Proper Line Quality and Design as per specifications for during Clean-Up process
6. Duration 360 Hrs
7. Course Content

<i>Practical Competencies</i>	<i>Underpinning Knowledge (Theory)</i>
Drawing Basics -Forms & Shapes:To be able to draw basic forms and shapes Design Fundamentals, Perspective Drawing, Shading & Shadows Sketching for Animation (Stick Figures & Thumbnails) Drawing Human Figures:-Drawing realistic human figures & Imagination Drawing Key frames:Basics of Drawing Key Frame and Identifying keys in action	Theory related to Practical

Ladders & Sheets :Able to read Ladder & understanding timing of a scene. Drawing In-betweens :Understanding the Principle of Animation and applying the same to create in-betweening CleanUp:To be able to cleanup the keys and Inbetweening for final Animation. Ink & Paint :Digitized the In-betweening & Keys to create an animation sequence and to be able to use Digital Tools for creating Animation shorts.	
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|---------------------------|--|
| 1. Course Name | INBETWEENING FOR 2D ANIMATION |
| 2. Sector | Information & Communication Technology |
| 3. Code | ICT236 |
| 4. Entry Qualification | SSC Passed & Having completed course on Behavioural Basics or Soft Skills |
| 5. Terminal Competencies: | <p>a.Gain knowledge in 2D animation production process.& apply this knowledge to understand the work instructions from related animation function.</p> <p>b.Create Animation Shorts based on a Storyboard & Keyframes.</p> <p>c.Draw Inbetweens based on Keyframes and Xsheets in Minimum time.</p> <p>d.Create Animation sequences using innovative tools for Web & TV media.</p> |
| 6. Duration | 300 Hrs |
| 7. Course Content | |

<i>Practical Competencies</i>	<i>Underpinning Knowledge (Theory)</i>
Drawing Basics -Forms & Shapes:To be able to draw basic forms and shapes Design Fundamentals, Perspective Drawing, Shading & Shadows Sketching for Animation (Stick Figures & Thumbnails Drawing Human Figures:-Drawing realistic human figures & Imagination	Theory related to Practical

Acting for Animation Storyboarding & Character Design Drawing Key frames: Basics of Drawing Key Frame and Identifying keys in action Ladders & Sheets : Able to read Ladder & understanding timing of a scene. Drawing In-betweens : Understanding the Principle of Animation and applying the same to create in-betweening CleanUp: To be able to cleanup the keys and Inbetweening for final Animation. Ink & Paint : Digitize the Inbetween drawings and apply colors as per the scene design Flash Animation : Integrate the in-betweens and keys to create an animation sequence. To be able to use digital tools of create animation shorts Project work	
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1. **Course Name** **INK & PAINT FOR 2D ANIMATION**

2. **Sector** **Information & Communication Technology**

3. **Code** **ICT237**

4. **Entry Qualification** **SSC Passed & Having completed course on**

Behavioural Basics or Soft Skills

5. Terminal Competencies:
- a. Gain knowledge in 2D animation production process.& apply this knowledge to understand the work instructions from related animation function.
 - b. Create Animation Shorts based on a Storyboard & Keyframes.
 - c. Draw Inbetweens based on Keyframes and Xsheets in Minimum time.
 - d. Create Animation sequences using innovative tools for Web & TV media.

6. Duration

240 Hrs

7. Course Content

<i>Practical Competencies</i>	<i>Underpinning Knowledge (Theory)</i>
Drawing Basics -Forms & Shapes:To be able to draw basic forms and shapes	Theory related to Practical
Design Fundamentals, Perspective Drawing, Shading & Shadows	
Sketching for Animation (Stick Figures & Thumbnails	
Drawing Human Figures:-Drawing realistic human figures & Imagination	
Drawing Key frames:Basics of Drawing Key Frame and Identifying keys in action	
Ladders & Sheets :Able to read Ladder & understanding timing of a scene.	

Drawing In-betweens :Understanding the Principle of Animation and applying the same to create in-betweening CleanUp:To be able to cleanup the keys and Inbetweening for final Animation. Ink & Paint : Digitize the Inbetween drawings and apply colors as per the scene design	
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Trade Committee Members

<u>S</u> <u>No</u>	<u>Name & Designation</u> <u>S/Sh</u>	<u>Status</u>	<u>Remarks</u>
<u>1</u>	<u>R Senthil Kumar,</u> <u>Regional Director, RDAT</u> <u>,Mumbai</u>	<u>Chiarman</u>	
<u>2</u>	<u>Rajiv Vaishnav,VP,NASSCOM</u>	<u>Member</u>	
<u>2</u>	<u>Dr Chetan Samant ,NASSCOM</u>	<u>Member</u>	
<u>3</u>	<u>Prof Y Shah,Dean,Bhagubai</u> <u>Mafatlal Polytechnic,Mumbai</u>	<u>Member</u>	
<u>4.</u>	<u>K Pandyan,Gaphiti Multimedia</u>	<u>Member</u>	

<u>5</u>	<u>Adesh Bharadwaj,Graphiti Multimedia,</u>	<u>Member</u>	
<u>6</u>	<u>D K Pawagi,RDAT,Mumbai</u>	<u>Member</u>	