



A.B.N. 20 055 388 988
www.visionfix.com.au

Vision Fix Software & Support Pty. Ltd.

9c High Street, Charlton, Victoria 3525
Mail to P.O. Box 185, Wedderburn, Victoria 3518
Telephone 03 5491 2009
Registered **TAFE** Training Organisation Number 6872
Centrelink Institution Reference Number 3P286

Thank you for your enquiry regarding our correspondence course “Learn to Repair, Upgrade, Build and Network Personal Computers (with advanced networking)”.

This course is open to all persons, but a proficiency in the English Language is desirable. It is suitable for both hobbyists and those looking to obtain a career in I.T. hardware support as a repair technician, or in computer sales.

The correspondence course consists of twenty one lessons, each lesson provides a course manual of approximately seventy pages, followed by a twenty question assignment.

These manuals, are updated every week to provide you with the very latest information. Manuals are only printed as required - we do not keep stocks of outdated course material.

Students that obtain an average mark of eighty percent over all twenty one assignments will receive a Vision Fix certificate in “Computer Maintenance and Networking”. Furthermore, students that complete the practical work prescribed for the course will receive an accredited certificate, issued on behalf of the Victorian Registration and Qualifications Authority.

This certificate is in the form of a Statement of Attainment in the following ten units from the Information Technology Training Package (ICA05) :-

- ICAS2014B - Connect Hardware Peripherals**
- ICAI3021B - Connect Internal hardware Components**
- ICAS3115B - Maintain Equipment and Software in Working Order**
- ICAU2007B - Maintain Equipment and Consumables**
- ICAS3121B - Administer Network Peripherals**
- ICAI4029B - Install Network Hardware to a Network**
- ICAS5122B - Troubleshoot and Resolve Network Problems**
- ICAS1193B - Connect a Workstation to the Internet**
- ICAI4097B – Install and Configure a Network**
- ICAI5173B – Install and Configure a Single-Segment Local Area Network Switch**

This means that if ever you decide to go on with further studies in Information Technology, you may apply for recognition of prior learning (RPL) for one or more of the above units.

The certificate bears the "Nationally Recognised" logo, meaning that it is recognised within all states in Australia and Commonwealth countries.

Course Cost

The cost for the correspondence course is \$525 payable in three instalments (*or \$500 if the fee is paid in one instalment*) :-

\$275 upon enrolment
\$125 on submission of lesson number 8
\$125 on submission of lesson 15

Fees can be paid by returning the enclosed enrolment form and faxing or posting along with payment, or you can enrol over the telephone via credit card (Visa, Mastercard, or Amex).

Note that at any stage if you decide not to continue with the course, no further payments are required.

Please note that this fee includes all of the course manuals, a licenced copy of Window Server 2003, a licenced copy of either Microsoft Windows XP Professional, Microsoft Vista Business, or Windows 7 Professional, and the nationally recognised certificate.

How the course works

The following points give you information on the course structure :-

- Upon enrolment you will receive lessons 1 to 7 of the course manuals, and the CD disks.
- Your assignments can be sent via email, or can be faxed or posted.
- There is no time limit for each lesson - you work at your own pace. We will continue to maintain your enrolment until you finish the course.
- Once you have submitted lesson number five, we will then send you lesson books 8 to 15 so that you never run out of lessons to work on.
- On completion of lesson number 8, you will have the option to complete the first of a two part practical work assignment. This must be completed in order to be eligible for the accredited certificate.
- In the front of the lesson eight manual, you will find the invoice for the second payment, but this is not payable until you actually submit lesson eight.
- Once you submit lesson thirteen, we will send you lesson books 15 to 21 and again you will find an invoice for the final payment in the front of book fifteen. This invoice is not payable until you submit lesson number fifteen.
- On completion of lesson number 16, you will have the option to complete the second of the two part practical work assignment. This must be completed in order to be eligible for the accredited certificate.
- On successful completion of all twenty one lessons, we will then send your certificate within seven days. Students that completed the practical assignments will receive the accredited certificate, and student that did not complete the practical work will receive the Vision Fix certificate.

- Students who failed to achieve the pass mark may re-submit an assignment without extra cost.
- All assignments are assessed and returned within 48 hours.
- Students may ring the instructor at any time for advice if required, and are eligible to receive ongoing telephone support even after completion of the course. There is no time limit for this support service.

Course Syllabus

- **Lesson 1 - Bits, Bytes, The Microprocessor, Bus Structures**

This lesson explains the following:

- The concept of the binary numbering system
- The terms Bits and bytes
- The entire microprocessor family from the 8088 up to the latest processors on the market today
- The motherboard bus structures including the processor bus (front side bus), PCI and PCI-Express

- **Lesson 2 - Random Access Memory (RAM), Read Only Memory (ROM), The Motherboard**

This lesson covers the following aspects:

- Random Access Memory (RAM)
- Read Only Memory (ROM)
- The BIOS
- Detailed descriptions of all motherboards from the 8088 to the latest boards available
- Introduction to building a computer system
- Power supplies

- **Lesson 3 - Troubleshooting and Repairing the Motherboard**

Fault diagnosis and step by step troubleshooting procedures are covered in this lesson, with over twenty common motherboard problems documented.

A detailed explanation on how to use a multimeter.

- **Lesson 4 - Upgrading the Motherboard**

All of the upgrading issues are covered including:

- Compatibility of components
- Photographs to help along the way
- Adding extra memory
- Replacing a motherboard
- Upgrading a microprocessor
- Glossary of common computer terms



- **Lesson 5 - Floppy Drives and Hard Drives**

This lesson introduces the theory of:

- Floppy Disk Drives
- Hard Disk Drives
- Data Storage and management

- **Lesson 6 - Disk Drive Adaptors, Other types of Storage Media and Troubleshooting disk drives**

This lesson covers:

- Drive Adaptors (i.e. IDE, ATA, SCSI, and SATA)
- Other types of data storage media such as:
 - External USB Drives
 - NAS, Hybrid and solid state drives
 - Removable Drive Cradles
 - USB Thumb Drives
- Troubleshooting with over twenty common disk drive related problems documented
- RAID arrays

- **Lesson 7 - Upgrading and Installing Disk Drives**

This lesson demonstrates how to install and upgrade both hard and floppy drives and includes detailed information about partitioning and formatting the drive for all versions of Microsoft Windows. It also covers issues such as placing two hard drives into the same computer.

Recovering data from a corrupted hard drive

Backing up your data

- **Lesson 8 - Upgrading and repairing laptop Computers, The CMOS settings, "Building your own Computer" Part 1**

This lesson covers upgrading and repairing laptop computers including:

- Replacing a hard disk drive
- Upgrading RAM
- Replacing a defective keyboard
- Replacing a CD/DVD/Floppy drive
- Replacing the CMOS battery
- Setting the CMOS
- Replacing an LCD panel
- Replacing a microprocessor
- Replacing a motherboard

This lesson also includes part one of "Building your own Computer", which discusses the details of buying all of the required parts.

Note : at the end of this lesson, you will be given the option to participate in the practical work to qualify for the accredited certificate.

- **Lesson 9 - Communication Devices**

This lesson offers an in depth look at communication devices such as:

- Parallel and Serial ports
- USB 1.1, 2.0, and 3.0
- Firewire
- Printers – basic repairs and maintenance
- Data switches
- Bluetooth Devices
- Keyboards
- Mice and trackballs

- **Lesson 10 - Modems, Direct Cable Connection and Troubleshooting and Peripheral Devices**

This lesson examines the following:

- Modems (56K, ADSL, and Cable)
- Bar Code Scanners and point of sale equipment
- Troubleshooting peripheral devices with over twenty common problems documented
- I.P. Addresses and how to set them



- **Lesson 11 - Installing a modem, High speed serial card and "Building your own Computer" Parts 2 & 3**

This lesson will cover the issues of installing a 56K, ADSL and cable modem. Parts two and three of "Building your own computer" are also included and cover:

- Setting up the motherboard and installing it into the case
- Installing and setting up the disk drives
- An in depth look at the CMOS settings

- **Lesson 12 - Video cards, Monitors and multimedia devices**

This lesson gives a non technical insight into how both CRT and LCD monitors produce the screen image as well as how a video card works, including the 8x AGP port, the 16 x PCI-e bus, HDMI and DVI. The sound card is then looked at along with the CD player, CDR/RW, DVD drives, Video capture cards, scanners, digital cameras and uninterruptible power supplies. KVM switches, video splitters and data projectors are also covered.

- **Lesson 13 - Troubleshooting Peripheral Devices, Installing CD devices, Setting up your own computer business, Windows problems, "Building your own Computer" Part 4**

This lesson covers:

- Troubleshooting peripheral devices - over twenty commons problems are discussed.
- Installing a DVD/CD writer.
- The steps required to establish a computer repair business including information such as:
 - Registering a business
 - Advertising
 - Tools and equipment
- Common Windows problems
- Part four of "Building your own Computer" includes installing and setting up of additional devices and testing the finished product.

- **Lesson 14 - Networking Part 1**

This lesson covers:

- Network basics
- A brief look at Token ring
- The Ethernet system:
 - CSMA/CD
 - MAC addresses
 - Network cables - Thin Ethernet, thick Ethernet, CAT5, CAT5e, CAT6
- The difference between peer to peer and client/server networks
- The difference between Windows XP, Vista, and Windows 7

- Putting a network together
- Hubs, switches and routers
- Installing a network with Windows XP, Vista, and Windows 7 - sharing files - mapping to a drive
- Setting up a network printer - via a computer port, via a switch and via a print server

- **Lesson 15 - Networking Part 2**

This lesson covers:

- Sharing an Internet Connection with 56K, ADSL and cable modems.
- Setting up a network using Windows 98
 - Connecting the computers together
 - Sharing files and Printers
 - Connecting to a 56K or ADSL/Cable modem
- Wireless Networking
- Administering and maintaining a network
 - Placement of network equipment
 - Naming conventions for workstations
 - A close look at client/server versus pier to pier
 - Hardware Maintenance
 - The Site Map
 - Maintenance Schedules
 - Backing up Network data
- Troubleshooting and repairing network problems

- **Lesson 16 - Networking Part 3**

This lesson covers:

- An in depth look at TCP/IP
 - Classes of IP addresses
 - The subnet mask
 - DHCP and static IP addresses
 - The default gateway
 - The Domain Name System (DNS)
 - Automatic Private IP Addresses (APIPA)
 - MAC addresses
 - Sockets and Ports
- The seven layer OSI model
- Network Reports and Documentation
- Installing a PCI Ethernet card
- Making a CAT 5e cable
- Installing an RJ45 Wall Point
- Miscellaneous Network Commands
- Installing a removable hard disk cradle

Note : at the end of this lesson, you will be given the option to participate in the practical work to qualify for the accredited certificate.

- **Lesson 17 – Client/Server Networks – Installing Windows server 2003**

This first part of this lesson takes you through the administrative aspects of setting up a network for a client including:-

- Examine the network requirements.
- Determine the equipment to be supplied
- Obtain specifications, pricing and availability of equipment
- Installing the hardware
- Installing the software
- Documenting and signing off the installation

This remainder of the lesson takes you the installation of Microsoft Windows Server 2003. Topics include:-

- The different versions of Server 2003
- Purchasing client access licences
- Windows Server 2003 concepts
- Partitioning and formatting the hard drive – RAID
- Creating a dual boot hard disk drive
- Installing a CD player and DVD/CD writer.
- Installing Server 2003:-
 - Setting static I.P. address
 - Installing the DHCP server and setting the scope
 - Installing active directory
 - Raising the domain and forest functional levels
 - Creating hard disk drive volumes
- Active directory – creating user accounts
- Uninstalling a domain controller

- **Lesson 18 - Setting up a Complete Client Server Network**

This lesson covers:

- Organisational units and Groups
- Setting up a client computer via Windows XP, Vista, and Windows 7
- Folders, Files and Permissions – shared drive volumes
- Controlling network printers
- Group policy management
- Setting up an ADSL or cable Internet connection
- The complete set up of a structured network.

- **Lesson 19 – Managed Switches and Troubleshooting Utilities**

The first part of this lesson covers layer two managed switches in detail, showing you the features that they provide.

The second part then gives you thirteen handy troubleshooting tools that can be used in the diagnosis of network faults. These include:-

- Installing the Windows standard 56K modem drivers
 - Checking a hardware device via *Device Manager*
 - Checking the CMOS settings
 - Installing or replacing a network adaptor
 - Disabling the Windows firewall
 - Using the DOS **ping** and **ipconfig** commands
 - Running the network wizard and Internet connection sharing
 - Checking the TCP/IP settings
 - Setting up an ADSL modem/router
 - Setting up a router for a cable modem
 - Installing a cable modem
 - Installing a modem/wireless combination
 - Checking a workgroup name via Windows
- **Lesson 20 – Troubleshooting Procedures for Networks and Modems**

This lesson covers:

- Four problem scenarios for networks without an Internet connection
 - Three problem scenarios for networks with a 56K modem attached.
 - Four problem scenarios for networks with an ADSL modem connection
 - Four problem scenarios for networks with a cable modem attached.
 - Three problem scenarios for networks with a wireless ADSL or cable modem attached.
 - Troubleshooting issues specific to client/server networks
- **Lesson 21 – Performance Monitoring, Miscellaneous Equipment and Glossary**

This lesson covers:

- Using Task Manager with Windows
- Performance monitoring with Server 2003
- Creating performance logs
- Setting system alerts
- Monitoring event logs
- Ethernet over Power (EoP) devices
- Hardware Firewalls
- The binary and hexadecimal numbering system
- A complete glossary of networking terms

Please note that in order to be able to carry out the practical work, you will need access to a working computer that you can open up, and two computers to carry out the networking tasks.

During the course you will be shown how to create a dual boot system with Windows XP and Server 2003.

At the end of each lesson there will be some optional practical exercises for you to try.



For any further information, please call me on (03) 9841 7077 or email to info@visionfix.com.au.

Regards

Alan Mulraney

General Enrolment Informational

Course participation

Material is studied at the students premises via correspondence, and there is no time limit for the submission of each lesson.

Course assignments must be submitted in a legible format, and if emailed, must be submitted either in Microsoft Word, or typed directly into the body of the email.

Students that do not contact Vision Fix for a period of one year will be deemed to have abandoned the course.

Support Services

At any stage during the course you will be able to contact your instructor, either by email, fax, post, or telephone to ask any questions, or discuss any problems that you may be having with the course material.

Students with special needs – access and equity

If you have any handicaps or disabilities please talk to us and we will endeavor to ensure that your needs are catered for.

Vision Fix has a code of practice that includes an access and equity policy. This document is available on request. It is the responsibility of all our staff to ensure the requirements of the access and equity policy are met by the organisation at all times.

Language, Literacy or Numeracy problems

Please note that this course is only available in the English language. If you have a problem with language or literacy, please talk to us prior to course commencement so that we can suggest a course of action. Note that there are virtually no requirements for mathematical skills in this course.

Welfare and guidance services

This course is Centrelink approved for the Pensioner Education Supplement (PES), which covers those that are of working age, but are not able to do so due to health problems.

Please contact your local Centrelink office or your job network agency for details as regards eligibility and level of assistance.

Recognition of Prior Learning

Students who believe they already have the competencies in the course may apply for Recognition of Prior Learning (RPL). An application for RPL may only be made after

enrolment and payment of fees and must be made using the application form that can be obtained from Vision Fix Software & Support Pty Ltd.

Assessment Appeals and other Grievances

Although Vision Fix has never had any issues relative to assessment disputes or complaints since the course was first run in 1995, the Australian Qualifications Authority standards require that we advise of procedures for the student to adopt if such a problem should occur.

In the first instance, the student should discuss the matter with the course instructor, which in most cases should resolve the problem.

If this fails, then a written complaint should be lodged to the Director, Vision Fix Software & Support Pty Ltd who will then take immediate steps to resolve the problem.

If this still does not resolve the problem then an independent arbitrator will be appointed to make a final decision, which will be provided in writing to both parties.

Relevant Legislation

A range of legislation is applicable to Vision Fix and all staff and students. Information on relevant legislation can be found as follows.

Occupational Health & Safety – www.business.channel.vic.gov.au

Equal opportunity :- www.eoc.vic.gov.au

Vocational Education & Training :- www.otte.vic.gov.au

Workcover :- www.workcover.vic.gov.au

Privacy :- www.privacy.gov.au

It is the responsibility of all staff to ensure the requirements of relevant legislation are met by Vision Fix at all times. Please use the web sites indicated or contact the training manager if you require further information.

Privacy

Personal Information is collected solely for the purpose of operating as a Registered Training Organisation under the Australian Quality Training Framework administered by the Victorian Government who are the registering authority. The requirements of the registering authority may require the release of your personal information for the purposes of audit.

Under the National Privacy Principles you can access personal information held on you, and you may request corrections to information that is incorrect or out of date. At any stage, you may request to view your student records. Requests must be in writing to your course instructor, and your record will be posted to the address given on your enrolment form.

The following courses contain units that are covered in the “ Learn to Repair, Upgrade and Build Personal Computers” course :-

Certificate I in Information Technology - E-Consumer

ICAS2014B - Connect Hardware Peripherals

ICAS1193B - Connect a Workstation to the Internet

Certificate II in Information Technology - Applications

ICAS2014B - Connect Hardware Peripherals

ICAU2007B - Maintain Equipment and Consumables

Certificate III in Information Technology - General

ICAI3021B - Connect Internal Hardware Components

ICAS3115B - Maintain Equipment and Software in Working Order

Certificate III in Information Technology - Network Administration

ICAS3121B - Administer Network peripherals

Certificate III in Information Technology - Client Support

ICAS3121B - Administer Network peripherals

Certificate IV in Information Technology

ICAS2014B - Connect Hardware Peripherals

ICAI3021B - Connect Internal Hardware Components

Certificate IV in Information Technology - Database Administration

ICAS3115B - Maintain Equipment and Software in Working Order

ICAS3121B - Administer Network Peripherals

Certificate IV in Information Technology - Helpdesk

ICAS2014B - Connect Hardware Peripherals

ICAU2007B - Maintain Equipment and Consumables

ICAI4029B - Install Network Hardware to a Network

Certificate IV in Information Technology - Network Management

ICAI4029B - Install Network Hardware to a Network

ICAI4097B – Install and Configure a Network

Certificate IV in Information Technology - Programming

ICAI3021B - Connect Internal Hardware Components

ICAS3115B - Maintain Equipment and Software in Working Order

Certificate IV in Information Technology - Technical Support

ICAI3021B - Connect Internal Hardware Components

ICAS3115B - Maintain Equipment and Software in Working Order



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Correspondence Course Enrolment Form
Learn to Repair, Upgrade, Build and Network Personal Computers
(with advanced Networking)
Comprising ten units from the Information Technology Training Package

Victorian Student Number Only for students under 25 years old N = I don't yet have one ? = I have one but can't remember it		
Student Name		Sex (M/F)
Date of Birth		
Delivery Address		
Telephone	Home :	Mobile :
Email Address		
How did you hear about the course?		
Type of Credit Card	Mastercard <input type="checkbox"/> Visa <input type="checkbox"/> Amex <input type="checkbox"/>	
Credit Card Number		
Name on Card		
Expiry Date		
Windows Disk (please tick the one that you require)	Windows XP Pro <input type="checkbox"/> Windows Vista Bus <input type="checkbox"/> Windows 7 Pro (32 bit) <input type="checkbox"/> Windows 7 Pro (64 bit) <input type="checkbox"/>	

Please indicate the amount that you wish to pay :-

I wish to pay the first instalment of \$275

I wish to pay the full course fee of \$500
(\$525 less a \$25 discount for full payment of course fee)

Cheques and money orders should be made payable to Vision Fix Software & Support
Please allow up to five working days for delivery by parcel post.