EIT ENGINEERING INSTITUTE OF TECHNOLOGY

LIVE, INTERACTIVE CLASSES OVER THE INTERNET

PROFESSIONAL CERTIFICATE OF COMPETENCY IN

TROUBLESHOOTING, DESIGNING, AND INSTALLING DIGITAL AND ANALOG CLOSED CIRCUIT TV SYSTEMS

12 MODULES OVER 3 MONTHS

For upcoming commencement dates, please view our course schedule at:
http://www.eit.edu.au/schedule

Keep you and your company one step ahead with this comprehensive overview of Digital and Analog Closed Circuit TV Systems

Live, interactive webinars - learn from industry experts with hands-on experience

WHAT YOU WILL LEARN

- Understand the essentials of CCTV system
- Install and commission simple CCTV system
- Design a CCTV system
- Maintain CCTV cameras
- Define the differences between analogue and digital CCTV
- Apply the CCTV lab test charts
- Compare the standards used in CCTV
- Networking simple digital CCTV system
- List the differences between wire and wireless video transmission
- Identify the security issues in CCTV
- Outline the main steps in maintenance and commissioning of CCTV

Presented by

Frikkie Marx

Pr Eng, B Sc (Eng)
Senior Engineer

ENROL NOW: Fax the enrolment form to us, or email enquiries@eit.edu.au

BENEFITS OF LIVE E-LEARNING

- Attend lessons in an online classroom with your instructor and fellow students
- Upgrade your skills and refresh your knowledge without having to take valuable time away from work
- Receive information and materials in small, easy to digest sections
- Learn while you travel - all you need is an Internet connection
- Have constant support from your course instructor and coordinator for the duration of the course
- Interact and network with participants from around the globe and gain valuable insight into international practice
- Learn from international industry experts, based around the globe
- Live interactive webinars, not just a 'book on the web'
- Receive a certificate of completion for CPD purposes

PRESENTATION FORMAT

The certificate program features real-world applications and uses a multi-pronged approach involving self-study, interactive online webinars and homework assignments with a mentor on call. The course consists of 12 modules, over a period of 3 months.

Some modules may involve a practical component or group activity. For each module there will be an initial reading assignment along with coursework or problems to be handed in and practical exercises in some cases. Participants will have ongoing support from their instructor and course coordinator.

Course reading material will be delivered in electronic (PDF) format in advance of online presentations. Presentations and group discussions will be conducted using a live interactive software system. Assignments will be submitted electronically and wherever possible, practical exercises will be conducted using simulation software and remote labs.

LIVE WEBINARS

During the program you will participate in 6 live interactive sessions with the instructor and other participants from around the world. Each webinar will last approximately 60 to 90 minutes, and we take student availability into consideration wherever possible before scheduling webinar times. Contact us for details of webinar session scheduling. All you need to participate is an adequate Internet connection, speakers and a microphone. The software package and setup details will be sent to you prior to the course.

PRESENTED BY

FRIKKIE MARX

Pr Eng, B Sc (Eng) Senior Engineer

Frikkie has over 20 years of experience in the fields of power electronics from design to industrialisation. Starting his career on the power system protection side, he migrated to EMC and power supply systems. Frikkie's portfolio of achievements includes the design of power systems, switch mode power supplies, UPS, high precision servo amplifiers, battery and inverter design solar panel applications, vehicle management, specialised computer systems and high current starter for vehicle plants. He is a lecturer and course developer of industrial and power electronics for Technikon SA (UNISA). He is also a project manager/ system engineer for the development of electro-optical systems which include video systems for UAV's and a high resolution infra-red camera.

Other training activities include the mentorship programs of Kentron, industrial electronics, rockets and robots training programme for the Denel Youth Foundation Bridging Program as well as training consultant.

He has also successfully started and managed an IT company specialising in wireless internet and networks. In this new venture he has done strategic technical research, business development with regard to new services/products, wireless management system for repossessed properties, electrified palisade as well as development and presentation of wireless and VoIP technical courses.

An enthusiastic instructor with a wealth of knowledge under his belt, you will gain much from his entertaining style, as thousands of others have benefited from his knowledge. Don't miss this excellent workshop presented by a leading engineer in PE, EO subsystems and EMC/EMI.

12 MODULES OVER 3 MONTHS

OVERVIEW:

The objective of this course is to give you practical know-how in designing, installing, commissioning, maintaining and troubleshooting analog and digital CCTV systems. The poor quality of CCTV images often seen, doesn't inspire much confidence in the technology. However the purpose of this course is to ensure you apply best practice in all your work with CCTV systems. With the recent terrorist outrages in London and other cities, CCTV systems have been essential as a key tool in fighting crime. And have perhaps shifted from being part of "Big Brother" to a useful tool. CCTV systems have undergone a remarkable technology transformation in the past decade from analog to digital and in operating on a wireless or cabled network, with a host of additional features. This has made the design and maintenance considerably more complex.

This course thus provides you with useful expertise in building and maintaining a high quality CCTV system. The program commences with a detailed review of the fundamentals; progressing to optics and TV systems. Modern CCTV cameras and monitors are then examined followed by a review of video processing equipment and analog video recording. The vital changes from the analog to digital world are then examined in considerable depth. The essentials of networking as applied to CCTV systems are then discussed with practical examples. The course is concluded with best practice in CCTV system design and commissioning and maintenance.

INCLUDES 4 FREE REFERENCE MANUALS

VALUED AT OVER US$400

YOU WILL RECEIVE 4 OF OUR UP-TO-DATE TECHNICAL E-BOOKS TO ADD TO YOUR LIBRARY.

- Troubleshooting, Designing and Installing Digital and Analog Closed Circuit TV Systems
- Practical Radio & Telemetry Systems for Industry
- Wireless Networking Technologies for Industry
- Practical TCP/IP and Ethernet Networking for Industry

Received upon completion.

All materials required for the course will be provided electronically, in smaller, easy-to-read sections.

Please Note: e-Books are available in hard copy at 50% of the recommended retail price. Contact us for pricing details.

COURSE OUTLINE

MODULE 1: Light & Optics

- Human eye & Light
- Sources of light
- Eye persistence- motion pictures
- Comparison between eye and camera
- Optical elements
- Basics of a lenses
- Types of lenses
- Lenses as applied in CCTV

MODULE 2: Transmission Media

- Wired communication media
  - o Coaxial cables
  - o Twisted pair video transmission
  - o Fibre optics
  - o Fibre optics cables
  - o Fibre optic link analysis
- Wireless Communication
  - o Microwave links
  - o RF wireless (open air) video transmission
  - o Infrared wireless (open air) video transmission
- Installation techniques

MODULE 3: Fundamentals of Television

- Working of television
- Video & Television Signals
- Picture resolution
- Television synchronization
- Instruments commonly used in CCTV
  - Oscilloscope
  - Spectrum analyser
  - Vectorscope

MODULE 4: Cameras for CCTV

- Types of cameras
- Charge Coupled Device
  - Sensitivity and resolution of the CCD
  - Types of charge transfer in CCDs
- Parameters of Camera
- Working of a Camera
- Camera Voltages

MODULE 5: CCTV Monitors

- Cathode Ray Tube Monitors
- Monitor sizes, safety and adjustments
- Recommendations for better viewing
- Other displays

MODULE 6: Recording Technology

- Principles of Video Recording
- Analog recording
- VCR, VHS and their limitations
- Maintenance of a VCR
- Digital video
- Standards
- Elements of a picture
- Compression in video recording
- Facial recognition
- Digital recording media & Computers
- Information Security
- MTBF (Mean Time Between Failure)

MODULE 7: Switching and Multiplexing Equipment

- Need for Switching
- Switching equipment
- Quad Splitters
- Video Multiplexers
- Video Motion Detectors (VMDs)

MODULE 8: Networking Technologies

- Network concepts and components
- Ethernet
- Network topologies
- OSI reference model
- TCP / IP
- Networking equipment
- Wireless networks

MODULE 9: Telemetry Control

- Control types
- Control signals in CCTV
- Telemetry equipment
- Data communications

MODULE 10: Supporting Equipment for CCTV

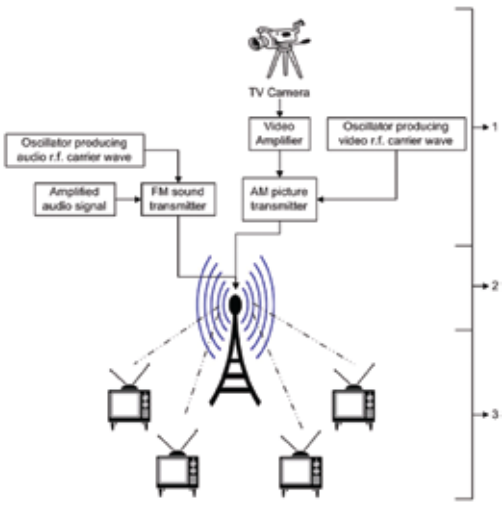
- Mounting equipment
- Pan/tilt units
- Lighting
- Monitor brackets

MODULE 11: Design Considerations

- Need analysis
- Selecting equipment according to the requirement
- Drawings - CCTV symbols
- Installation
- Camera protection

MODULE 12: Commissioning & Maintenance

- Commissioning
- Training
- Maintenance



HARDWARE AND SOFTWARE REQUIREMENTS

All you need to participate is an adequate Internet connection, PC, speakers and a microphone. The software package and setup details will be sent to on the course commencement date.

ENTRANCE REQUIREMENTS

Some practical work experience in some of these topics would obviously be advantageous.

PRACTICAL EXERCISES

Throughout the course you will participate in hands-on exercises using simulation software, which will help you put theory to practice immediately!

CERTIFICATION

Participants completing all the assignments and achieving 60% or more for their final mark, as well as attending 65% of the live webinars, will receive the Engineering Institute of Technology Professional Certificate of Competency in Troubleshooting, Designing, and Installing Digital and Analog Closed Circuit TV Systems.

ON-SITE TRAINING

We can provide our training at the venue of your choice. On-site training can be customised and by bringing the trainer to site the dates can be set to suit you!

"The Customer is Always Right" – so tell us what you need and we will design a training solution at your own site.

For a FREE detailed proposal please contact Kevin Baker via e-mail: training@idc-online.com