

Understanding Digital Technology

4 Day Course Schedule

Now includes HDTV, encoding, file based workflows and hard disk recording



Aims of the Course

This highly popular course is designed for all those working with video and audio but who have had no formal technical training or need updating. The course covers the essentials of video and audio technology, through to the latest developments including HD and even 3D. The key knowledge required to work with digital media successfully.

Theory is made digestible by expert trainers who are also practitioners.

Participants leave the course with knowledge gaps filled and able to work at a higher level with greater efficiency.

Day 1

AM

Session 1 Groundwork

- The principles of video and audio
- The principles of broadcast television
- Contemporary distribution and transmission of video and audio data
- Analogue and digital fundamentals

Session 2 Audio

- Analogue and digital essentials and signal formats
- Levels, distortion, metering
- Mono / stereo / surround / split tracks
- Audio mixers - functions and controls
- Audio awareness for editing

PM

Session 3 The Video Signal

- The television system
- Aspect ratios, frames, fields, lines, active picture, timings, SD & HD
- Monitors and receivers – CRT, plasma, LCD
- Why we need to monitor, measure & test
- Signal systems: RGB, YUV Component and Composite, Digital
- Practical's: Using a waveform monitor, setting up a colour monitor, component and composite scopes

Day 2

Session 4 Cameras

- Principles of video cameras
- Tapeless cameras – memory card types and operation
- DSLR and digital film cameras (5D and Red) – processing differences to video workflows
- Typical contemporary functions in digital cameras
- Practical's: Camera set-up, checks and camera care
- Monitors and viewfinders
- Outputs: HDSDI, HDMI, composite, USB, Firewire

Session 5 Recording

- Magnetic recording
- Tape based audio / video recording and decks
- Tape formats, broadcast and non-broadcast., analogue and digital
- High Definition recording systems and formats
- Essentials of tape operation and editing practical's

Day 3

Session 6 Overview of file-based video systems and workflows

- Tapeless camera formats
- Managing files and metadata
- Non-linear editing systems – setup and operation
- Compression for video and audio
- Wrapper file formats, codecs
- MPEG 2 and MPEG4, Intra and long GOP
- Compression artifacts, how to identify and avoid them
- Hard disk and flash memory recorders for video and audio

Day 4

Session 7 IT for TV

- Basic networking principles – TCP/IP, IP addresses and configuration
- Hard disks in acquisition, post production and archive
- Drive formats and RAID setups
- DVD and Blu-ray Disk authoring and burning
- Hooking up decks and drives. Common issues

Session 8 3D TV

- Cameras, Rigs, Recording, monitoring on location limitations
- Editing stereoscopic video
- Graphics, CGI and the 3D implications
- The tools being used today
- Distribution - Broadcast Channels, Blu-ray, Cinema
- 3D Games and the S-3D alliance

An opportunity to bring together the previous days' work and apply to real-life scenarios