CCSMT17
Carry out advanced analogue and digital equalisation for music and audio industries

Overview

It is important for studio engineers in all recording sectors to further understand the types of equalisation and equalisation processing equipment being used. This standard demonstrates an understanding of the equalisation section of a mixing console and other external processing equipment in all types of studios. The aim of this standard is to demonstrate competency across a range of industry standard equalisation systems that are used in professional studios when working with a huge variety of audio and sound sources. You will balance audio signals and adjust equalisation. You will use listening techniques in order to evaluate effective equalisation on a wide variety of audio materials, such as a live recorded drum kit or string quartet. You are required to repair or process audio materials requiring a series of specific EQ treatments. You will also balance several audio signals and deliver processed signals in a desired way using a variety of EQ resources. This standard includes console, hardware and software Equalisation modules for these processing skills. This standard utilises the multi tasking skills expected of today's recording engineers and programmers.

Good practice and operation:

Parametric equalisers, semi-parametric equalisers, valve equalisers, digital (para-graphic) equalisers, filter, Frequency band, bandwidth, boost, centre frequency, cut, cut-off frequency, filter, filter slope, EQ cut ON/OFF switch, bypass, gain, headroom, (HPF) high pass filter, (LPF) low pass filter, octave, Q value, resonance, shelving filter, swept filter, notch filter, Q, 1/3rd-octave, 2/3rd-octave, pass band, stop band, band pass filter, sweep mid, bell, shelf, HF (high frequencies), LF (low frequencies), Mid (midrange frequencies)

Uses: Cut, boost, attenuate, filters, HPF, LPF, Gain, notch filters, sweep filters, bandwidth, shelving, slope, Q, EQ cut/mute switches,

This standard demonstrates the use of industry standard equalisation systems that are often used in professional studios when working with audio. You must research and evaluate the different equalisation systems available and the reasons studio engineering makes full use of each system.

You will need to have a detailed understanding of when to use equalisation and when to leave the signal unprocessed. You need to explore both hardware and software equalisation systems. You are required to research and sketch out your own frequency chart that can be referred to as an operational guide to all instruments and vocals and their suggested placement within the frequency spectrum.

CCSMT17
Carry out advanced analogue and digital equalisation for music and audio industries

Performance criteria

You must be able to:

P1   process audio signals with various EQ systems

P2   use equalisation sections on a professional mixing consoles

P3   use equalisation sections on professional hardware units

P4   use equalisation sections on a professional DAW software plug ins

P5   use EQ inserts and connectivity on various audio signals

P6   use correct equalisation system terminology

P7   make adjustments and changes via the equalisation section on all channels

P8   produce frequency guide equalisation charts

P9   complete written records of changes made to audio materials

P10   make improvements to selected multi-track audio materials in line with specific instruction or requirements (needs)

P11   make a stereo recording (30-60 secs) of each EQ task (before/after)

P12   report details of any instrument or equipment that is suspected of being in unsafe condition, or is damaged in use, promptly as required.

P13   safely tidy, reset and disconnect all equipment

CCSMT17
Carry out advanced analogue and digital equalisation for music and audio industries

Knowledge and understanding

You need to know and understand:

K1   how to examine equalisation (EQ) systems

K2   equalisation system terminology

K3   how to assess the uses of equalisation

K4   how to evaluate the effects of equalisation use on various audio signals

K5   how to examine the effects of equalisation on audio material

K6   the EQ system types found on professional recording and mixing consoles

K7   the elements and uses of equalisation types

K8   the subtractive and additive uses of EQ system types

K9   the functional differences of all EQ system types

K10   common frequency ranges associated with instruments and vocals

K11   how to use equalisation to solve or improve multi-track audio material

CCSMT17
Carry out advanced analogue and digital equalisation for music and audio industries

Developed by	Creative and Cultural Skills
Version number	1
Date approved	April 2012
Indicative review date	April 2016
Validity	Current
Status	Original
Originating organisation	Creative and Cultural Skills
Original URN	CCSMT17
Relevant occupations	Recording Engineers; recording Producers; mix engineers; assistant engineers; programmers; composers; writers; artists; tape ops;
Suite	Music Technology; Live Events Management
Key words	Equalisation; Equalisers; EQ; EQ'ing; Parametric equalisers; semi-parametric equalisers; valve equalisers;, digital (para-graphic) equalisers, filters; Cut; boost; attenuate, filters;, HPF; LPF; Gain; notch filters; sweep filters; bandwidth; shelving; slope; Q; EQ cut/mute switches; sound; music; music technology; Live Events, Exhibitions;