

LAPT

LONDON ACADEMY OF PROFESSIONAL TRAINING

CERTIFICATE

Certificate in Audio Engineering Fundamentals

Foundation Level



LAPT — London Academy of Professional Training

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Reference MU-MPR-F • Music and Performing Arts Centres

UKPRN 10067351 • Registered in England and Wales, company 4984798

AT A GLANCE

REFERENCE	MU-MPR-F
AWARD	Certificate
ASSESSMENT	440 marks — 264 to pass (60%)
PREREQUISITES	None
VALIDITY	Lifetime
AWARDING BODY	LAPT — London Academy of Professional Training

CURRICULUM

1 Audio Equipment and Technologies 4 chapters · 20 classes65 marks	
• 1 Understanding Basic Audio Equipment — 5 classes › 1.1 Exploring the Basics of Audio Signal Flow › 1.2 Identifying Different Types of Microphones › 1.3 Understanding Mixer Functions and Controls › 1.4 Learning About Audio Interfaces and Connectivity › 1.5 Operating Basic Audio Recording Equipment • 2 Signal Flow and Connectivity — 5 classes › 2.1 Understanding Basic Signal Flow in Audio Systems › 2.2 Identifying Types of Audio Connectors and Cables › 2.3 Exploring Audio Interface Functionality › 2.4 Configuring Patch Bays for Optimized Signal Routing › 2.5 Troubleshooting Connectivity Issues in Audio Setups	• 3 Digital Audio Basics — 5 classes › 3.1 Understanding Digital Audio: Converting Sound to Data › 3.2 Exploring Sample Rates and Bit Depth: The Fundamentals of Audio Quality › 3.3 Identifying Common Digital Audio Formats and Their Uses › 3.4 Analyzing the Role of Compression in Digital Audio › 3.5 Applying Basic Digital Audio Editing Techniques • 4 Introduction to Sound Processing Technologies — 5 classes › 4.1 Understanding the Basics of Sound Waves › 4.2 Exploring Digital and Analog Sound Processing › 4.3 Identifying Key Audio Equipment and Their Functions › 4.4 Recognizing the Role of Audio Interfaces in Sound Processing › 4.5 Applying Fundamental Techniques in Sound Editing
2 Digital Audio Workstations 4 chapters · 20 classes65 marks	
• 1 Introduction to Digital Audio Workstations and Software Overview — 5 classes › 1.1 Understanding Digital Audio Workstations: Key Features and Functions › 1.2 Exploring Popular DAW Software: An Overview of Leading Platforms › 1.3 Setting Up Your First Project: A Step-by-Step Guide › 1.4 Navigating DAW Interfaces: Essential Tools and Menus › 1.5 Recording and Editing: Basic Techniques to Start Your First Track • 2 Understanding Audio Formats and Signal Flow in DAWs — 5 classes › 2.1 Identifying Common Audio Formats › 2.2 Exploring Bit Depth and Sample Rate Concepts › 2.3 Tracing Signal Flow within DAWs › 2.4 Comparing Lossy and Lossless Audio Formats › 2.5 Applying Signal Routing Techniques in DAWs	• 3 Basic Audio Editing and Processing Techniques — 5 classes › 3.1 Navigating and Understanding the DAW Interface › 3.2 Importing and Organizing Audio Tracks › 3.3 Editing Audio Clips: Cutting, Copying, and Arranging › 3.4 Applying Basic Audio Effects: EQ and Compression › 3.5 Exporting Your Project: File Formats and Settings • 4 MIDI Integration and Virtual Instruments in DAWs — 5 classes › 4.1 Understanding MIDI Protocols and Functions › 4.2 Navigating MIDI Devices in Your DAW › 4.3 Configuring and Connecting Virtual Instruments › 4.4 Creating and Editing MIDI Tracks for Composition › 4.5 Applying MIDI Effects and Automation Techniques

3

Introduction to Sound Theory

4 chapters · 20 classes

90 marks

• 1 Chapter 1 — Fundamentals of Sound Waves — 5 classes

- › 1.1 Understanding Sound Waves and Their Properties
- › 1.2 Exploring Frequency and Pitch
- › 1.3 Investigating Amplitude and Volume
- › 1.4 Analyzing Waveforms and Their Shapes
- › 1.5 Applying Sound Wave Principles in Audio Applications

• 2 Chapter 2 — Acoustic Principles and Environments — 5 classes

- › 2.1 Exploring the Nature of Sound Waves
- › 2.2 Understanding Frequency and Pitch
- › 2.3 Analyzing the Impact of Amplitude on Sound
- › 2.4 Examining Acoustic Reflections and Absorption
- › 2.5 Applying Room Acoustics: Optimizing Sound Environments

• 3 Chapter 3 — Psychoacoustics and Human Perception — 5 classes

- › 3.1 Understanding the Basics of Psychoacoustics
- › 3.2 Exploring How Humans Perceive Sound
- › 3.3 Examining the Role of Frequency and Amplitude in Hearing
- › 3.4 Investigating the Influence of Sound Localization
- › 3.5 Applying Psychoacoustic Concepts in Audio Engineering

• 4 Chapter 4 — Digital Audio Basics — 5 classes

- › 4.1 Understanding Digital Audio Concepts
- › 4.2 Exploring Sample Rate and Bit Depth
- › 4.3 Converting Analog to Digital Sound
- › 4.4 Analyzing Digital Audio Formats
- › 4.5 Applying Audio Compression Techniques

4

Mixing and Mastering Essentials

4 chapters · 20 classes

90 marks

• 1 Chapter 1 — Understanding the Mixing Console and Signal Flow

— 5 classes

- › 1.1 Exploring the Basic Layout of a Mixing Console
- › 1.2 Identifying and Understanding Signal Pathways
- › 1.3 Utilizing Channel Strips for Effective Audio Control
- › 1.4 Configuring Aux Sends and Returns for Signal Routing
- › 1.5 Applying Master Section Controls for Optimal Output

• 2 Chapter 2 — Equalization Techniques for Clarity and Balance — 5 classes

- › 2.1 Understanding Frequency Ranges for Clear Mixing
- › 2.2 Identifying and Correcting Frequency Conflicts
- › 2.3 Exploring Various Equalization Tools and Techniques
- › 2.4 Applying Equalization for Balanced Instrumentation
- › 2.5 Evaluating Mixes for Clarity and Balance using EQ

• 3 Chapter 3 — Dynamics Processing: Compression and Limiting —

5 classes

- › 3.1 Understanding Dynamic Range and Its Impact on Audio
- › 3.2 Exploring the Mechanics of a Compressor
- › 3.3 Setting Compression Parameters Effectively
- › 3.4 Applying Limiting to Control Peaks and Enhance Loudness
- › 3.5 Integrating Compression and Limiting in a Mix

• 4 Chapter 4 — Finalizing Mixes: Mastering for Distribution — 5 classes

- › 4.1 Understanding the Mastering Process
- › 4.2 Analyzing and Preparing Your Final Mix
- › 4.3 Applying EQ and Compression for Mastering
- › 4.4 Exploring Limiting and Loudness Techniques
- › 4.5 Exporting and Distributing Your Mastered Track

5

Recording Techniques

4 chapters · 20 classes

65 marks

• 1 Understanding Sound and Microphone Basics — 5 classes

- › 1.1 Exploring the Nature of Sound Waves
- › 1.2 Analyzing Frequency and Amplitude
- › 1.3 Understanding Microphone Types and Uses
- › 1.4 Evaluating Microphone Placement Techniques
- › 1.5 Applying Sound Principles in Recording Scenarios

• 2 Signal Flow and Audio Interfaces — 5 classes

- › 2.1 Exploring Signal Flow: Understanding the Path of Audio Signals
- › 2.2 Identifying Audio Interfaces: Types and Connectivity
- › 2.3 Analyzing Signal Chains: Key Components in Audio Recording
- › 2.4 Configuring Audio Interfaces: Setup for Optimal Performance
- › 2.5 Troubleshooting Signal Flow Issues: Strategies and Solutions

• 3 Techniques for Capturing High-Quality Audio — 5 classes

- › 3.1 Understanding Sound: Fundamentals of Audio Capturing
- › 3.2 Selecting the Right Microphone: Types and Applications
- › 3.3 Optimizing Recording Environment: Minimizing Noise and Echo
- › 3.4 Setting Up Equipment: Best Practices for Signal Chain Management
- › 3.5 Implementing Advanced Techniques: Enhancing Audio Quality

• 4 Introduction to Multi-Track Recording and Overdubbing — 5 classes

- › 4.1 Understanding Multi-Track Recording: An Initial Overview
- › 4.2 Exploring the Components of a Multi-Track Recorder
- › 4.3 Setting Up for a Multi-Track Recording Session
- › 4.4 Mastering Overdubbing Techniques for Precision
- › 4.5 Applying Multi-Track Recording and Overdubbing in Practice

• 1 The Basics of Sound Waves and Acoustics — 5 classes

- › 1.1 Understanding Sound Waves: Fundamentals and Characteristics
- › 1.2 Exploring Frequency and Amplitude: Key Sound Properties
- › 1.3 Analyzing Waveforms: Shapes and Their Impact on Sound
- › 1.4 Discovering Acoustics: How Sound Interacts with Environments
- › 1.5 Applying Acoustic Principles: Real-World Sound Design Techniques

• 2 Sound Synthesis and Signal Processing — 5 classes

- › 2.1 Understanding Basic Waveforms in Sound Synthesis
- › 2.2 Exploring Oscillators and Their Role in Sound Design
- › 2.3 Manipulating Sound with Filters and Envelope Generators
- › 2.4 Analyzing Signal Processing Techniques for Audio Effects
- › 2.5 Applying Synthesis Techniques in Sound Design Projects

• 3 Designing Soundscapes: Tools and Techniques — 5 classes

- › 3.1 Exploring the Basics of Soundscapes
- › 3.2 Identifying Key Elements in Sound Design
- › 3.3 Utilizing Digital Tools for Sound Manipulation
- › 3.4 Creating Atmosphere with Layering Techniques
- › 3.5 Applying Soundscaping Techniques in a Project

• 4 Advanced Sound Design: Creative Application — 5 classes

- › 4.1 Exploring Advanced Audio Effects for Sound Design
- › 4.2 Designing Unique Soundscapes for Immersive Experiences
- › 4.3 Manipulating Sound with Creative Modulation Techniques
- › 4.4 Integrating Foley and Synthesized Elements
- › 4.5 Crafting Emotion Through Dynamic Soundscapes