

LAPT

LONDON ACADEMY OF PROFESSIONAL TRAINING

CERTIFICATE

Certificate in Electronic Music Synthesis

Foundation Level



LAPT — London Academy of Professional Training

Address 85 Great Portland Street, W1W 7LT, London, United Kingdom

Email info@lapt.org

Telephone +44 7513 283044

Web lapt.org

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

UKPRN 10067351 • Registered in England and Wales, company 4984798

AT A GLANCE

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

CURRICULUM

1 Creative Applications of Synthesis 4 chapters · 20 classes65 marks	• 1 Exploring Basic Waveforms and Sound Properties — 5 classes › 1.1 Understanding Basic Waveforms: Sine, Square, Sawtooth and Triangle › 1.2 Exploring Sound Properties: Frequency, Amplitude, and Timbre › 1.3 Comparing and Contrasting Waveforms: Visual and Auditory Analysis › 1.4 Manipulating Waveforms: Simple Modulation Techniques › 1.5 Applying Waveform Knowledge: Creating Basic Synth Patches • 2 Introduction to Subtractive and Additive Synthesis — 5 classes › 2.1 Exploring the Basics of Subtractive Synthesis › 2.2 Understanding Waveforms and Harmonics in Additive Synthesis › 2.3 Comparing Subtractive and Additive Synthesis Techniques › 2.4 Crafting Sounds with Subtractive Filters and Envelopes › 2.5 Building Complex Sounds Using Additive Layering • 3 Using Modulation for Dynamic Sound Design — 5 classes › 3.1 Understand the Basics of Modulation › 3.2 Explore LFOs and their Impact on Sound › 3.3 Apply Envelope Modulation for Dynamic Textures › 3.4 Utilize FM Synthesis for Complex Modulations › 3.5 Combine Modulation Techniques for Unique Sounds • 4 Creative Applications of Sampling and Granular Synthesis — 5 classes › 4.1 Exploring the Basics of Sampling › 4.2 Understanding Granular Synthesis Techniques › 4.3 Creating Texture with Layered Sounds › 4.4 Manipulating Samples for Creative Effects › 4.5 Applying Granular Synthesis to Music Production
---	---

3

Fundamentals of Electronic Sound

4 chapters · 20 classes

90 marks

• 1 Understanding Sound Waves and Their Characteristics — 5 classes

- › 1.1 Exploring the Nature of Sound Waves
- › 1.2 Analyzing Frequency and Pitch
- › 1.3 Examining Amplitude and Volume
- › 1.4 Investigating Waveforms and Timbre
- › 1.5 Applying Sound Wave Characteristics in Synthesis

• 2 Fundamentals of Oscillators and Waveforms — 5 classes

- › 2.1 Exploring Oscillator Types and Their Characteristics
- › 2.2 Understanding Waveforms: Sine, Square, and Sawtooth
- › 2.3 Analyzing Amplitude and Frequency Modulation Techniques
- › 2.4 Creating and Manipulating Sound with Oscillator Detune
- › 2.5 Applying Oscillators in Sound Design Projects

• 3 Introduction to Synthesizer Components and Signal Flow — 5 classes

- › 3.1 Explore the Anatomy of a Synthesizer
- › 3.2 Understand Oscillators and Waveform Generation
- › 3.3 Examine Filters and Their Impact on Sound
- › 3.4 Discover the Role of Amplifiers and Envelopes
- › 3.5 Map the Signal Flow in a Synthesizer

• 4 Basic Sound Modulation Techniques — 5 classes

- › 4.1 Explore the Fundamentals of Sound Modulation
- › 4.2 Understand Amplitude Modulation Techniques
- › 4.3 Dive into Frequency Modulation Fundamentals
- › 4.4 Discover the Role of Phase Modulation in Sound Design
- › 4.5 Apply Modulation Techniques in Electronic Music Production

4

Introduction to Synthesis Techniques

4 chapters · 20 classes

65 marks

• 1 Fundamentals of Sound and Waveforms — 5 classes

- › 1.1 Exploring the Nature of Sound Waves
- › 1.2 Identifying Waveform Characteristics
- › 1.3 Understanding Frequency and Pitch
- › 1.4 Analyzing Amplitude and Dynamics
- › 1.5 Applying the Basics of Wave Synthesis

• 2 Oscillators and Sound Generation — 5 classes

- › 2.1 Understanding Sound Waves and Oscillators
- › 2.2 Exploring Types of Waveforms in Synthesis
- › 2.3 Utilizing Frequency and Amplitude in Oscillators
- › 2.4 Designing Sound with Subtractive Synthesis
- › 2.5 Applying Modulation Techniques to Oscillators

• 3 Filters and Modulation Techniques — 5 classes

- › 3.1 Understand Filter Types and Their Functions
- › 3.2 Explore Low-Pass and High-Pass Filters in Synthesis
- › 3.3 Apply Band-Pass and Band-Stop Filters to Sound Design
- › 3.4 Discover Modulation Sources: LFOs and Envelopes
- › 3.5 Integrate Filters and Modulation for Dynamic Sound Creation

• 4 Programming Synthesizers and Sound Design — 5 classes

- › 4.1 Understanding Synthesizer Signal Flow
- › 4.2 Exploring Oscillator Types and Waveforms
- › 4.3 Shaping Sound with Filters and Envelopes
- › 4.4 Modulating Sound using LFOs and EGs
- › 4.5 Designing a Basic Synth Patch

5

Performance Technology

4 chapters · 20 classes

65 marks

• 1 Understanding Electronic Music Performance Tools — 5 classes

- › 1.1 Exploring Electronic Music Interfaces
- › 1.2 Understanding MIDI and Its Role in Live Performance
- › 1.3 Utilizing Synthesizers in a Performance Context
- › 1.4 Integrating Effects and Processors for Live Sound
- › 1.5 Configuring Digital Audio Workstations for Stage Use

• 2 Signal Flow and Audio Pathways — 5 classes

- › 2.1 Understanding Signal Flow in Electronic Music
- › 2.2 Exploring the Components of an Audio Pathway
- › 2.3 Analyzing the Route of Sound from Input to Output
- › 2.4 Configuring Signal Paths for Optimal Performance
- › 2.5 Troubleshooting Common Signal Flow Issues

• 3 Optimizing Live Performance Setups — 5 classes

- › 3.1 Understanding Key Components of Live Performance Setups
- › 3.2 Configuring MIDI Controllers for Optimal Performance
- › 3.3 Streamlining Software Setup for Live Environments
- › 3.4 Managing Audio Interfaces and Signal Flow
- › 3.5 Enhancing Live Performance with Effects and Automation

• 4 Integrating Visuals and Interactive Technologies — 5 classes

- › 4.1 Exploring the Role of Visuals in Electronic Music Performance
- › 4.2 Understanding Interactive Technologies in Live Performances
- › 4.3 Integrating Visuals and Audio: Techniques and Tools
- › 4.4 Designing Interactive Experiences for Audience Engagement
- › 4.5 Creating a Cohesive Audio-Visual Performance

• 1 Fundamental Principles of Sound Design — 5 classes

- › 1.1 Understanding Waveforms: The Building Blocks of Sound
- › 1.2 Exploring Frequency and Pitch in Sound Design
- › 1.3 Shaping Sound: The Role of Amplitude and Volume
- › 1.4 Harnessing Envelopes: Controlling Attack, Decay, Sustain, and Release
- › 1.5 Creating Timbre: The Art of Using Filters and Modulation

• 2 Synthesizers and Signal Flow — 5 classes

- › 2.1 Understanding Synthesizer Components and Their Functions
- › 2.2 Exploring Signal Flow in a Synthesizer Circuit
- › 2.3 Altering Oscillators to Shape Sound Waves
- › 2.4 Modulating Filters and Envelopes for Dynamic Sound Control
- › 2.5 Crafting Custom Patches with Synthesizer Signal Paths

• 3 Techniques for Patch Creation — 5 classes

- › 3.1 Explore Basic Sound Waveforms
- › 3.2 Understand Envelope Generators
- › 3.3 Apply Modulation Techniques
- › 3.4 Experiment with Filter Effects
- › 3.5 Design a Unique Synth Patch

• 4 Advanced Modulation and Sound Transformation — 5 classes

- › 4.1 Explore LFO Techniques for Dynamic Sound
- › 4.2 Harness Envelopes for Complex Modulation
- › 4.3 Utilize FM Synthesis for Timbre Variation
- › 4.4 Implement Advanced Waveform Manipulation
- › 4.5 Apply Modulation to Transformative Sound Design