

Liverpool John Moores University

Title: Core Recording Skills
Status: Definitive
Code: **4520STE** (124032)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: Liverpool Institute for Performing Arts

Team	Leader
Karl Jones	

Academic Level: FHEQ4
Credit Value: 20
Total Delivered Hours: 77
Total Learning Hours: 200
Private Study: 123

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	36
Practical	1
Workshop	40

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	Test	Practical Test	20	
Report	Coursework	Coursework – Multitrack Recordings	80	

Aims

This module aims to provide a solid foundation in the practical use and operation of modern recording studio technology. Although the module is predominantly based in a recording studio environment, it has been designed to ensure that much of the content is immediately transferable to other, more specialised areas. Although most of the module is of a practical nature, it is part of LIPA's core philosophy that

students can not only do something, but also understand why they are doing it and how it happens. Because of this, there is a strong theoretical backbone to the module, but this is always in the context of practical applications.

Learning Outcomes

After completing the module the student should be able to:

- 1 Use basic recording studio technology effectively and efficiently
- 2 Select appropriate techniques to record and mix multi-track recordings involving acoustic and non-acoustic sources
- 3 Demonstrate a clear grasp of signal path and routing in an analogue studio environment
- 4 Identify and solve common technical faults in a studio environment

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Practical Test	3	4
Coursework – Multitrack Record	1	2

Outline Syllabus

Recording Studio Basics

The history and development of the modern studio; Key components of a recording studio; Basic principles of multitrack recording; 'Split' vs. 'In-Line' recording console architecture and function; Patchbays - basic principles and normalising conventions; Input channels, busses and tape monitors; Console master section; Signal routing and pan; Signal levels and gain; Metering; PFL and Solo; Basic Autolocator functions; Recorder Monitor Modes; Backup and Restore

Working With Microphones

Microphone types and operating principles; Polar patterns; Frequency response and audio characteristics; Phantom power; Care and feeding of microphones; Setting up microphones; Observation of polar patterns and responses; The inverse-square law in practice; Critical listening tests with different microphones; Using auxiliary sends and foldback; Studio communications

EQ

Equaliser function; Frequency and Timbre; Equaliser Types - Fixed, Sweep, Graphic, Parametric; Equaliser Responses - Peaking, Shelving, High Pass, Low Pass, Band Pass; Equaliser Bandwidth - 'Q' and what it means; General suggestions for use; Matching numbers to sounds; Describing timbres; Demonstration of differences in responses; Using a sweep EQ; Cutting and Boosting - the knob goes both ways!; Corrective EQ exercises; Creative EQ exercises

Mixing

Functions of a mix; Stereo / mono compatibility; Dynamic range considerations; Playback system considerations; Fletcher-Munson curves and their importance to your final mix; Mixing with EQ rather than level; Spatial separation and imaging; Strategies for a successful mixdown; Using groups as an aid to mixing; Balancing FX levels - some advice; Checking for mono compatibility; Achieving a uniform balance across playback systems; Compressing/EQing a complete mix; Using exciters (or perhaps not...); Cleaning up your mix

Recording Guitars

Range of guitars - acoustic, electric, semi-acoustic; How sound is generated; Tuning and guitar set-up; Acoustic guitar microphone approaches; Electric Guitars and guitar cabs; Micing Guitar Cabs - typical approaches; DI Boxes and impedance matching; DI vs. Mic; Practical microphone placements for acoustic guitars; Practical microphone placements for electric guitars; Working with DI boxes - demonstration of incorrect impedance matching; Using compression and EQ with electric guitars

Recording Vocals

Importance of vocals to pop music; How sound is generated; Typical microphone technique for lead vocals; Coaching a vocalist; Alternative techniques for recording backing vocals; Foldback techniques to combat pitching problems; Practical microphone placement exercises; Avoiding popping and sibilance with mic placement; Using de-essers; Compression for vocals; FX suggestions for vocals; Vocal 'comp' tracks; Double tracking, ADT and pitch correction

Recording Drums

Elements of the drum kit; How the sound is generated; Drum Tuning; Minimum mic technique - advantages & disadvantages; Maximum mic technique - advantages and disadvantages; Review of common mic selections; Crosstalk and how to get around it; Drum Tuning exercises; Damping and eliminating rings; Practical microphone placements; Using EQ and filters; Using noise gates - working with side chain filters; Using compressors with drums

Other Instrument Recording

Microphone selection and placement for acoustic piano, brass and stringed instruments.

Session Management

Ways of recording - As Live, Tracked or a Combination; Strengths and weaknesses of each method; How much time to allow; Strategies for maximising your studio time; Record Keeping - tracksheets, settings files and song maps; Labelling conventions for master recordings; Performing manual drop-ins; Performing automatic drop-ins; Cleanup, Editing functions, file export and import to ProTools

Basic Dynamics Processors

Differences between effects and processors; Dynamic range; The need for compression; Function of a compressor; Typical controls and their use - threshold, ratio, attack and release parameters; Varying characteristics of compressors - peak detectors, RMS detectors, hard knee, soft knee; Function of a noise gate; Typical controls and their use - threshold, attack, hold, release and range

Basic Effects

Effects in the natural world; Delay as the mother of all effects; Reverberant spaces; Early artificial effects; The effects loop; Summary of generic effects type; Auxiliary Sends and Returns - building an FX loop; Alternative patching arrangements - strengths and weaknesses; Using delays; Introduction to modulation FX.

Learning Activities

This module will be delivered using a combination of lectures and practical workshop activities.

The lectures will generally cover the theoretical material and the workshops will explore the practical application of theory and techniques covered in lectures.

Notes

Jon Thornton is the Module Leader (J.Thornton@lipa.ac.uk)