

Liverpool John Moores University

Title: Core Recording Skills
Status: Definitive
Code: **4510STE** (118555)
Version Start Date: 01-08-2016

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

Team	Leader
Karl Jones	Y

Academic Level: FHEQ4 **Credit Value:** 24 **Total Delivered Hours:** 97.5
Total Learning Hours: 240 **Private Study:** 142.5

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	36
Seminar	12
Workshop	48

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	EXAM	WRITTEN EXAM	30	1.5
Presentation	PRES	SEMINAR PRESENTATION	15	
Test	TEST	PRACTICAL OPERATIONAL TEST	10	.5
Practice	PRAC	2 STUDIO RECORDINGS	30	
Report	RPT	WRITTEN EVALUATION (1200 WORDS)	15	

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 Display a reasonably detailed knowledge of the function and use of recording studio equipment
- 2 Record and mix multi-track recordings to an appropriate standard (see assessment criteria) using a non-automated desk and outboard equipment.
- 3 Evaluate their recorded work from a technical and non-technical perspective
- 4 Demonstrate a clear grasp of signal path and routing within an analogue recording environment
- 5 Identify and analyse production values in a recorded work by others

Learning Outcomes of Assessments

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

WRITTEN EXAM	1
SEMINAR	5
PRESENTATION	
PRACTICAL	4
OPERATIONAL TEST	
2 STUDIO	2
RECORDINGS	
WRITTEN EVALUATION (1200 WORDS)	3

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 normalling conventions; Input channels, busses and tape monitors; Console master section; Signal routing and pan; Signal levels and gain; Metering; PFL and Solo; RADAR Operation - Basic Autolocator functions; Tape Machine 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 (talkback)

The Mysterious Art of 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; Bass guitar problems - IMD and how to avoid it

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; drum replacement techniques

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; Advanced RADAR operations: 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; The Sabine Equation; 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; Basic preset recall on SPX2000, Lexicon 300, M2000 and M7; Working with reverb; Using delays; Introduction to modulation FX.

Reverse Engineering – an approach to critical analysis

Reverse engineering – from Silicon Valley to Tin Pan Alley; song structure; song energy levels; dynamic shifts and control; measuring production – avoiding subjectivity.

Learning Activities

This module is delivered in lecture, small group workshop and seminar formats. Students are expected to work in pairs or small groups for the purposes of practical assignments and seminar presentations.

Notes

Generally speaking, there will be one hour and half lecture per week, and two hours of supervised and structured workshop time per week. The lecture will cover the theoretical or general concepts that you will cover practically in the workshop later. Often, your workshop may be separated from your workshop by some hours, or may even be on a different day. Therefore, it's important that you quickly go over any notes or reading before your workshop session to make sure you are up to speed.

After the first five weeks of teaching there is an operational test which forms part of your assessment. In this week, you will be scheduled for an individual 30 minute test in the studio in place of your lecture/workshop.

In the last few weeks of the module, workshops finish and are replaced by bookable

tutorials. You will be able to sign up to see a tutor individually or in groups if you wish to go over a particular subject for your exam, or if you need some help and advice with your practical work.

We strongly advise that during the early part of this module you make time to go over the subjects covered in the studio with a partner. Particularly at the beginning of the module, this will help build your confidence and will make sure that you understand and remember things.