Sound Reinforcement 2

Module Information

2022.01, Approved

Summary Information

Module Code	5533STE
Formal Module Title	Sound Reinforcement 2
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Liverpool Institute for Performing Arts

Learning Methods

Learning Method Type	Hours
Lecture	20
Practical	4
Workshop	20

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-PAR	PAR	September	12 Weeks

Aims and Outcomes

Aims	This module aims to build on and develop the skills and techniques learned in Sound Reinforcement 1. Whilst that module is based around small to medium sized portable sound reinforcement, and largely in a popular music context, this module addresses larger sound reinforcement systems in both fixed installations and portable situations. It also introduces the learner to the specific requirements of sound-reinforcement and sound design in theatrical and other non-musical contexts. More advanced technologies are introduced, such as the use of RF systems for microphones and monitoring, active speaker management and measurement systems, advanced applications of live sound digital mixing consoles, introduction to digital audio networking and the use of sophisticated DSP based systems for processing and show control.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Design, rig, optimize and operate a medium to large sound reinforcement system appropriate to a given brief in a theatrical context and including both live elements and recorded cues
MLO2	2	Demonstrate a detailed knowledge of the function and use of digital speaker management and measurement systems, RF mics, wired and wireless monitoring and communication systems
MLO3	3	Identify, diagnose and resolve faults in complex sound reinforcement systems taking into account relevant safety requirements including power distribution
MLO4	4	Apply the forms and conventions of theatrical sound design to process and product
MLO5	5	Critically evaluate their process and product including both technical and non-technical influences

Module Content

Outline Syllabus	Advanced Speaker Systems Multiple speaker arrays – distributed approaches to reinforcement; active speaker management systems – crossover points and responses, compression and protection; rigging and flying techniques for loudspeakers; time alignment and imaging Advanced System Design Working with mix matrixes; analogue and digital live sound consoles; digital audio networking basics; DSP based system processing – advantages and disadvantages, key components, software building blocks, building DSP-based system processing profiles, remote monitoring; power distribution – single and multi-phase, distribution and conditioning units, avoiding earth loopsRF Technology and Communications Systems Basic principle of RF transmission and reception; aerial types and uses; frequency planning, management and licensing; inter-modulation and how to avoid it; RF distribution and head amplification; working with radio microphones – capsule types and characteristics, mic placement strategies and techniques with head-worn microphones; working with In-Ear Monitoring Systems; Communication systems for live sound - design and implementation Theatre Sound Design Similarities and differences in theatrical reinforcement requirements; role of the sound designer; working from scripts; building an FX plot and sound cues, practical effects; integrating live music with theatre; roles and jobs in theatre; protocols for working in theatre; planning and producing documentation System Measurement and Tuning Principles of measurement – pink noise and spectrum analysis vs. TEF/MLSSA/dual FFT principles; using software and hardware tools for measurement, including an introduction to SMAART-Live.
Module Overview	
Additional Information	Chris Layton is the Module Leader.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Practice	Portfolio	40	0	MLO1, MLO4
Exam	Practical Project	60	0	MLO1, MLO2, MLO3, MLO5

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings

Partner Module Team

Contact Name	Applies to all offerings	Offerings