

# Sound Technology

## Module Information

2022.01, Approved

### Summary Information

|                     |                  |
|---------------------|------------------|
| Module Code         | 4505AMPCC        |
| Formal Module Title | Sound Technology |
| Owning School       | Engineering      |
| Career              | Undergraduate    |
| Credits             | 20               |
| Academic level      | FHEQ Level 4     |
| Grading Schema      | 40               |

### Teaching Responsibility

|                                   |
|-----------------------------------|
| LJMU Schools involved in Delivery |
| LJMU Partner Taught               |

### Partner Teaching Institution

|                  |
|------------------|
| Institution Name |
| Coleg Cambria    |

### Learning Methods

| Learning Method Type | Hours |
|----------------------|-------|
| Lecture              | 33    |
| Practical            | 6     |
| Tutorial             | 17    |

### Module Offering(s)

| Display Name | Location | Start Month | Duration Number Duration Unit |
|--------------|----------|-------------|-------------------------------|
| JAN-PAR      | PAR      | January     | 12 Weeks                      |

## Aims and Outcomes

|      |   |
|------|---|
| Aims | To introduce the principles of sound systems and sound waves, which can be applied to a wide range of acoustics and audio subjects. |
|------|---|

**After completing the module the student should be able to:**

### Learning Outcomes

| Code | Number | Description   |
|------|--------|---|
| MLO1 | 1      | Calculate relevant acoustic properties of typical environments and equipment  |
| MLO2 | 2      | Propose solutions to problematic environments and equipment   |
| MLO3 | 3      | Manipulate acoustic properties such as standard pressure level, intensity level, acoustic impedance etc to solve technical and practical problems |

## Module Content

|                        |  |
|------------------------|--|
| Outline Syllabus       | The nature of sound<br>Wavelength / Frequency Spectra<br>Sound pressure and intensity<br>Inverse square law<br>Temporal considerations, Haas effect<br>Sabine's equation, RT60<br>Room modes, standing waves, resonance, harmonics<br>Sound proofing and sound treatment<br>Loudness perception / fidelity<br>Sound intensity, power and pressure levels<br>Decibels (for acoustics) and standards<br>Sound reproduction<br>Loudspeaker design & testing<br>Industry-standard software for emulating loudspeaker performance |
| Module Overview        |  |
| Additional Information | This module presents the fundamentals and principles of acoustics and audio systems.   |

## Assessments

| Assignment Category | Assessment Name               | Weight | Exam/Test Length (hours) | Module Learning Outcome Mapping |
|---------------------|-------------------------------|--------|--------------------------|---------------------------------|
| Practice            | Room & equipment calculations | 70     | 0                        | MLO2, MLO1                      |
| Practice            | Acoustics                     | 30     | 0                        | MLO3                            |

## Module Contacts

### Module Leader

| Contact Name   | Applies to all offerings | Offerings |
|----------------|--------------------------|-----------|
| Colin Robinson | Yes                      | N/A       |

### Partner Module Team

| Contact Name | Applies to all offerings | Offerings |
|--------------|--------------------------|-----------|
|              |                          |           |