# Module Proforma

**Approved, 2024.02**

## Summary Information

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|---|---|
| **Module Code** | 7592CATSCI |
| **Formal Module Title** | Buildings for People |
| **Owning School** | Biological and Environmental Sciences |
| **Career** | Postgraduate Taught |
| **Credits** | 15 |
| **Academic level** | FHEQ Level 7 |
| **Grading Schema** | 50 |

## Module Contacts

### Module Leader

| Contact Name | Applies to all offerings | Offerings |
|---|---|---|
| Lucia Galvez Bravo | Yes | N/A |

### Module Team Member

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

### Partner Module Team

| Contact Name | Applies to all offerings | Offerings |
|---|---|---|
| Jane Fisher | Yes | N/A |

## Teaching Responsibility

| LJMU Schools involved in Delivery |
|---|
| Biological and Environmental Sciences |

## Partner Teaching Institution

| Institution Name |
|---|
| Centre for Alternative Technology |

## Learning Methods

| Learning Method Type | Hours |
|---|---|
| Lecture | 14 |
| Seminar | 8 |
| Workshop | 8 |

## Module Offering(s)

| Offering Code | Location | Start Month | Duration |
|---|---|---|---|
| SEP-PAR | PAR | September | 12 Weeks |

## Aims and Outcomes

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| **Aims** | a) Synthesise an understanding of the conceptual aspects and appreciate the complex nature of the inter relationships that exist between occupant comfort, energy flows in buildings and energy efficient building design.<br><br>b) Apply the above in practice and define how they relate to adaptation and sustainability in the built environment.<br><br>c) Develop a systematic, holistic, multidisciplinary and analytical approach to the critical appraisal of energy efficient design, heat flows, and provision of thermal comfort with respect to the demands of climate change adaptation and the principles of sustainability. |

## Learning Outcomes

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

| Code | Description |
|---|---|
| MLO1 | Demonstrate a clear comprehensive understanding of the principles of occupant comfort in the context of energy efficient design of the built environment under an adaptation and sustainability remit |

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|---|---|
| MLO2 | Illustrate a critical understanding of the general principles of heat transfers and ventilation in buildings in the context of the design of buildings under an adaptation and sustainability remit |
| MLO3 | Demonstrate skills in numerical analysis applied to energy flows in buildings |
| MLO4 | Critically evaluate a building's design in terms of effectiveness in providing for occupant comfort, energy efficiency, wider environmental impacts, and resilience to climate change |

## Module Content

| **Outline Syllabus** |
|---|
| Thermal comfort, Heat transfers through building fabric, determination of U values; Thermal mass, Ventilation, Impact of moisture on building fabric and occupant health, Passive Cooling, Passive approaches to sunlight and solar gain, Natural lighting, Solar resource, Urban heat island effect, Climate influences on design and future climate change considerations for this and Quantification of building performance |

**Module Overview**

| Additional Information |
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| Indicative References:<br><br>Core<br><br>McMullan, R., (2017) Environmental Science in Building 8th Edition, London: Palgrave Macmillan.<br><br>Recommended<br><br>CIBSE (2014) Buildings for extreme environments: Arid. London: Chartered Institute of Building Services Engineers.<br><br>CIBSE (2017) Buildings for extreme environments: Tropical. London: Chartered Institute of Building Services Engineers.<br><br>CIBSE (2017) CIBSE Buildings for extreme environments: Cold climates. London: Chartered Institute of Building Services Engineers.<br><br>CIBSE (2021) Environmental Design – CIBSE Guide A. London: Chartered Institute of Building Services Engineers.<br><br>Halliday, S. (2019) Sustainable Construction (2nd Edition). Routledge, London.<br><br>Pelsmakers, S., (2015) The Environmental Design Pocket Book (2nd Edition). London: RIBA Publishing.<br><br>Roaf, S. (2009) Adapting Buildings and cities for climate change: a 21st century survival guide. 2nd ed. Oxford: Elsevier.<br><br>Szokolay, S., (2014) Introduction to Architectural Science: The Basis of Sustainable Design (3rd Edition). Abingdon, Oxon: Routledge. |

## Assessments

| Assignment Category | Assessment Name | Weight | Exam/Test Length (hours) | Learning Outcome Mapping |
| --- | --- | --- | --- | --- |
| Essay | Essay | 60 | 0 | MLO1, MLO2 |
| Report | Numerical Analysis | 40 | 0 | MLO3, MLO4 |