Module Specification

Interactive Systems and Comfort Controls

Version: 2023-24, v2.0, 29 Mar 2023

Contents

Part 1: Information

Module title: Interactive Systems and Comfort Controls

Module code: UBLMHP-15-3

Level: Level 6

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Architecture & Built Environ

Partner institutions: None

Delivery locations: Not in use for Modules

Field: Architecture and the Built Environment

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: See Learning Outcomes

Outline syllabus: This is an indicative list of what the syllabus will contain. Subjects will not necessarily be taught in this order nor be of equal weighting:

User Movement in Buildings : semantic design between user and technology; way-finding; cognitive engineering of doors, ironmongery and access control; experience of the mobile impaired; physiology of rapid vertical transportation; natural surveillance and secure by design.

Visual and Non-Visual Effects of Light on Users: : evolution of the eye; atmospherics; colour engineering; non-visual physiology of light; mood lighting; lighting control; psychological impact of interaction between daylight and electric light; experience of the visually impaired.

User Actions in Times of Emergency: effectiveness of alarms and signals; user response to smoke; crowd behaviour; psychology of the vandal; effective systems for emergency management.

User Interactions with Information and Communication Technologies: audio-visual systems; data networks; wireless sensor networks; augmented reality.

Facilitating a sustainable use of energy technologies: using semantic design to encourage low energy use of buildings; interface with HVAC controls; energy-use feedback; user education of technical systems.

Users and Buildings that Learn: smart/intelligent buildings; neural computing; genetic algorithms; the internet of things.

Part 3: Teaching and learning methods

Teaching and learning methods: Contact time; Lectures and tutorials: 36 hours

Assimilation and development of knowledge: 74 hours

Portfolio and presentation preparation: 20 hours

Report preparation: 20 hours

Total study time: 150 hours

Scheduled learning Each topic will involve an introduction through lectures, when students will receive an explanation of the context of the subject and an indication of the depth to which they are expected to study it. Computer based tutorials will be used to explore the information sources available for student study.

Independent learning Students will be supported in their study with on-line resources including publications, websites, video clips and blackboard resources.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Undertake a User-Experience design review of a building project and derive, through applying engineering principles, a strategy for improving the experience of the user, both during normal building operation and in times of emergency

MO2 Design an innovative user interface for a building – by engineering both passive and active components – that encourages sustainable behaviours

MO3 Defend the usability of their design as part of a public consultation, when faced by conflicting requirements of owners, users, maintainers, constructers and designers

MO4 Undertake a literature review of a new building technology or system that influences the user experience, exploring :

Strengths of the proposal, supported by an evidence base

Weaknesses of the proposal, with lessons learnt from precedents

Opportunities of the proposal, with an application of the developing context afforded by developments in other sectors

Threats of the proposal, identifying the risks of failure

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/ublmhp-15-3

Part 4: Assessment

Assessment strategy: Strategy:

Assessment is designed to provide students with a structured approach to evaluating the interaction between building users and interactive systems. A range of learning activities and tasks contribute to a portfolio of work, which students will present and be questioned about. To accompany this broad cross-system analysis, students will then demonstrate a high level critical thinking by undertaking a deep and narrow literature review of one new system, reporting back on the evidence base in terms of strengths, weaknesses, opportunities and threats.

Assessment:

Presentation – (20 minutes) a presentation by the students of how user experience has influenced the detailed design and specification of a typical building and critical examination by the assessment team. Supporting documentation expected.

Written Assignment - Literature Review 1500 words. Students will prepare a literature review of a proposed new building technology or system, exploring the evidence for the proposal in terms of strengths, weaknesses, opportunities and threats.

Resit Presentation - a similar brief to that described above, which may include some topic changes.

Resit Written Assignment - a similar brief to that described above, which may include some topic changes.

Assessment components:

Presentation (First Sit)

Description: Portfolio and presentation (20 minutes)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Written Assignment (First Sit)

Description: Literature review (1500 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO4

Presentation (Resit)

Description: Portfolio and Presentation (20 minutes)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Written Assignment (Resit)

Description: Literature review (1500 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Building Services Engineering [SHAPE] BEng (Hons) 2023-24

Building Services Engineering [SHAPE] BEng (Hons) 2022-23

Building Services Engineering [Sep][FT][Frenchay][3yrs] BEng (Hons) 2021-22

Architecture and Environmental Engineering [Sep][FT][Frenchay][4yrs] BEng (Hons) 2021-22

Architecture and Environmental Engineering [Sep][SW][Frenchay][5yrs] BEng (Hons) 2021-22

Building Services Engineering {Foundation} [Oct][FT][GCET][4yrs] BEng (Hons) 2020-21

Building Services Engineering {Foundation} [Feb][FT][GCET][4yrs] BEng (Hons) 2020-21

Architecture and Environmental Engineering {Foundation} [Sep][SW][Frenchay][6yrs] BEng (Hons) 2020-21

Architecture and Environmental Engineering {Foundation} [Sep][FT][Frenchay][5yrs] BEng (Hons) 2020-21

Building Services Engineering {Apprenticeship-UWE} [Sep][FT][Frenchay][5yrs] BEng (Hons) 2019-20

Building Services Engineering [Sep][PT][Frenchay][5yrs] BEng (Hons) 2019-20