



Module Specification

Environment 3

Version: 2023-24, v2.0, 28 Jul 2023

Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	7
Part 4: Assessment.....	11
Part 5: Contributes towards	12

Part 1: Information

Module title: Environment 3

Module code: UBPMRX-10-3

Level: Level 6

For implementation from: 2023-24

UWE credit rating: 10

ECTS credit rating: 5

College: Faculty of Environment & Technology

School: FET Dept of Architecture & Built Environ

Partner institutions: None

Field: Planning and Architecture

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: Transferable Skills:

Collect,analyse and manage data from a wide variety of sources.

Critical thinking,understanding of creative interpretation of taught subject in design

Work with limited or contradictory information

Communicate effectively in a variety of formats

Work independently and in groups.

Features: Not applicable

Educational aims: This Module will enable students to be introduced to the current global climatic issues and its implications on the construction industry and built environment; the idea of sustainability, its multi faceted environmental, social and economic implications, its evolution and interpretations over the past two decades, its local interpretations, conservation of scarce natural resources for the future generations: discussing the ideas of re-use, recycle and renewable energy sources and passive systems in buildings and the integration of these ideas in the design of buildings in a creative manner.

The module will also introduce students to the environmental ethics and architects responsibilities, environmental rules, regulations, standards and implementing agencies as relevant to the national context of the building industry.

Outline syllabus: MAIN TOPIC 1

INTRODUCTION TO IDEAS OF SUSTAINABILITY (Term 1)

the current global climatic issues and it's implications on Sri Lanka with special emphasis on global warming, depletion of the ozone layer, melting of the ice caps and sporadic climatic changes and natural disasters, the effects of pollution and human health.

introduction to the ideas of Sustainability – man/family unit/community or neighbourhood/city; man/natural environment/built environment paradigms

the multi faceted dimensions of sustainability – environmental sustainability (concepts of re-use, re-cycle and re-new, use of local materials and passive technologies), social sustainability (concepts of the bottom up approach, involvement of the local community, empowering at grass root level, preserving local traditions and cultures, societal integration and promoting mixed use developments/corporate social responsibility), economic sustainability (use of resources, preserving scarce natural resources for future generations)

Case studies of built projects, community projects (local and international context)

evolution of the thoughts of sustainability and their interpretations over the past two decades – the earth summit – Rio de Janeiro, the Kyoto Protocol, the Bruntland Report, the Millennium Development Goals, Energy Summit etc. the inevitable truth – al gore

local interpretations of the ideas of sustainability

the built environment vs the natural environment – development, foot prints of buildings, preserving the natural eco system

the building industry as a consumer of natural resources for the production and use as building materials

the building industry as the largest consumer of energy - energy consumption of buildings in construction/construction processes/production and transport of building materials and in use building industry as a producer of waste - waste in construction and in use

MAIN TOPIC 2

CONCEPTS OF RE-USE, RECYCLE & RENEW (Term 1)

Elementary ideas and concepts of re-use, recycle and renew as applicable to the built environment

Exploration of these ideas in the design, construction/construction process and use of buildings

Understanding of Water as a scarce resource – it's use, re-use/recycle, and harvesting as applicable to the built environment

Renewable energy sources such as solar power, wind power and bio mass and their application in the built environment

re-use and recycling of building materials and related construction processes

Solid waste management as applicable to the built environment

MAIN TOPIC 3

INTRODUCTION TO ENVIRONMENTAL ETHICS & ARCHITECT'S RESPONSIBILITIES (Term 1)

Environment and the architect, environmental ethics

Elementary understanding of current - local legislation for environmental control, their concepts and implementation agencies

Setting bench marks and standards for the building industry and necessity to conform to these standards

Case studies of bench marked buildings

LIGHTING

MAIN TOPIC 1

INTRODUCTION (Term 1)

Theories of light and properties of light

Introduction to Optics – Light, Vision, Colour

Lighting terminology

MAIN TOPIC 2

PHOTOMETRY (Term 2)

Introduction to Photometry and calculations

Photometric data for luminaires, determining average illuminance, illuminance equation, determining illuminance

Illuminance Standards for different usages – residential, commercial, office, industrial, recreational, hospitals etc

MAIN TOPIC 3

DAY LIGHTING (Term 2)

Natural light, Sky light, Sun Light, Day light

Sky conditions, Sun path and Sky Illuminance

Daylight calculations

Designing buildings for Day Light – window design, sky light design, surfaces materials & colour, glare and visual comfort, controls for glare

MAIN TOPIC 4

ARTIFICIAL LIGHTING (Term 2)

Sources of Artificial Lighting

Types of luminaires (filament lamps, fluorescent lamps and ballasts, high intensity discharge lamps and ballasts, light emitting diodes, other electric light sources), their designs and applications and control gears

Interior lighting – principles, creation of lighting environments (emotional impacts, degrees of stimulations, glare and sparkle, direction and distribution of light), applicable lighting sources

Exterior lighting – principles, creation of lighting environments (glazed, solid, mixed and roofs; glare, light trespass, safety and security), applicable light sources

ACOUSTICS

MAIN TOPIC 1

INTRODUCTION (Term 2)

Introduction to Sound – Ear and sound transmission

Theories of sound and sound propagation – sources of sound, sound transmission

air borne sound, structure borne sound, behaviour of sound in enclosed and open spaces, measurement of sound,

properties of sound – wavelength, frequency, velocity, amplitude, magnitude

Characteristics of sound – absorption, reflection, dispersion, reverberation, resonance, echo

Noise and characteristics, standards and legislation

MAIN TOPIC 2

ACOUSTICS (Term 2)

Principles of Acoustics

Acoustics standards for different usages – conference areas, audio-visual/recording studios, cinemas /theatres, industrial buildings etc.

Designing for acoustics- principles, shapes of rooms, ceilings and balconies as reflectors, avoiding dead spots in sound transmission, materials for sound absorption, details for walls, floors and ceilingsto enhance acoustical properties of spaces.

Part 3: Teaching and learning methods

Teaching and learning methods: The delivery of this Module will be through: Lectures, Visual Presentations,, Individual/Group Field Project.

CONTACT HOURS:

SUSTAINABLE DESIGN

Lectures: 12

Practicals(Projects & Field visits): NONE

Seminars: NONE

Tutorials: 4

Independent Learning: 6

Assessment: 4

Directed Learning: NONE

Notional Student Effort 20 contact hours

LIGHTING

Lectures: 20

Practicals (Projects & Field visits): none

Seminars: none

Tutorials: none

Independent Learning:4

Assessment: none

Directed Learning:none

Notional Student Effort: 20 contact hours

ACCOUSTICS

Lectures: 10

Practicals (Projects & Field visits): 10

Seminars: none

Tutorials: 2

Independent Learning: 2

Assessment: 4

Directed Learning: none

Notional Student Effort: 20 contact hours

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

MO1 Sustainable Design & Alternate Technology

Awareness :

of the current global climatic issues and it's implications on Sri Lanka.

of the importance of creating sustainable environments for future generations

understanding the necessity to preserve scarce natural resources.

Knowledge:

of the evolution of the thoughts of sustainability and their interpretations over the past two decades.

of the multi-faceted dimensions of sustainability (environmental, social and economical factors) explored through case studies of built and community projects.

Development and the built environment vs the natural environment, the necessity for balance - looking at footprints of buildings, the energy consumption of buildings during construction, and during

the production and transport of building materials, building industrywaste –in construction and in use, and their re-use/recycle.

of the ideas of re-use, recycle and renew as applicable to the built environment.

Understanding:

the concepts of re-use and recycle in solid waste management in the construction and use of buildings, the concepts and use of renewable energy sources such as solar power, wind power and bio

mass in the built environment, water as a scarce resource – it's use, re-cycling and harvesting as applicable to the built environment. The exploration of these ideas and concepts and how they inform

the process of architectural design.

of environmental ethics and architects responsibilities.

of national environmental regulations, standards and implementing agencies as relevant to built projects.

Ability:

to integrate the ideas and thoughts on sustainability in design.

MO2 Lighting

Awareness:

of Optics – Vision and Visual performance

Knowledge:

of the theories and properties of light.

of the fundamentals of photometry.
of lighting standards.
of daylighting, it's implications and applications in architecture.
of artificial lighting, it's implications and applications in architecture.

Understanding:

of the principles of day lighting, artificial lighting (interior and exterior) and their application in architectural design in different situational contexts.

MO3 Acoustics

Awareness :

of Sound – Ear, sound and sound transmission

Knowledge :

of the theories and properties of sound
of the principles of acoustics
of acoustic standards
of acoustics in buildings

Understanding:

of the principles of acoustics and its application in architectural design in different situational contexts.

Hours to be allocated: 100

Contact hours:

Independent study/self-guided study = 580 hours

Face-to-face learning = 60 hours

Total = 640

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ubpmrx-10-3.html) via the following link <https://uwe.rl.talis.com/modules/ubpmrx-10-3.html>

Part 4: Assessment

Assessment strategy: Seminars, Tutorials, Year end written Examination

Assessment tasks:

Examination (First Sit)

Description: Written Examination

Weighting: 60 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Portfolio (First Sit)

Description: Coursework

Weighting: 40 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Examination (Resit)

Description: Written Exam

Weighting: 60 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Portfolio (Resit)

Description: Coursework

Weighting: 40 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Architecture [Oct][FT][SriLanka][3yrs] BArch (Hons) 2021-22