



Module Specification

Environment 6

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Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	6
Part 4: Assessment.....	7
Part 5: Contributes towards	9

Part 1: Information

Module title: Environment 6

Module code: UBPLXK-16-M

Level: Level 7

For implementation from: 2023-24

UWE credit rating: 16

ECTS credit rating: 8

College: Faculty of Environment & Technology

School: FET Dept of Architecture & Built Environ

Partner institutions: City School of Architecture Sri Lanka

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: To introduce students to the energy implications of buildings and the global and state policies for their control, stressing on the necessity for the integration of renewable technologies in design and construction of buildings.

Features: Not applicable

Educational aims: Collect, analyse and manage data from a wide variety of sources. Critical thinking, creative and innovative interpretation of taught subject in

design Work with limited or contradictory information Communicate effectively in a variety of formats Work independently and in groups.

Outline syllabus: The module will contribute to students' knowledge and understanding of:

Main Topic 1 :

ENERGY NEEDS OF BUILDINGS (Term 1)

Energy implications of buildings – the global scenario

Global policies and strategies for energy reduction in buildings

The national energy needs and energy implications of the construction industry – in manufacture, transport, construction, operation and use of buildings.

National policies, strategies and drives (targets, milestones and declarations) for energy reduction in the construction industry and buildings.

Energy sources, promoting indigenous energy resources, energy efficiency and conservation, energy security

Energy pricing policy, energy sector management and enhancing the quality of energy supply, related environmental impacts

Main Topic 2 : RENEWABLE ENERGY (Terms 1, 2 & 3)

Solar Energy (Term 2)

The source, implications of climate and weather

Harnessing solar energy – systems and principles, advantages and disadvantages, applications – domestic, industrial and large scale installations

Assessment of demand and supply, units, cost implications and pricing

Harnessing solar energy – spatial implications; design, detail and assembly; operation; maintenance

Integration to energy grid

Environmental impacts

Review of case studies

Wind Energy (Term 2)

The source, implications of climate and weather

Harnessing wind energy – systems and principles, advantages and disadvantages, applications – domestic, industrial and large scale installations

Assessment of demand and supply, units, cost implications and pricing

Harnessing wind energy – spatial implications; design, detail and assembly; operation; maintenance

Integration to energy grid

Environmental impacts

Review of case studies

Bio Mass Energy (Term 3)

The sources of Bio Mass Energy

Harnessing Bio Mass Energy – systems and principles, advantages and disadvantages, applications – domestic, industrial and large scale installations

Assessment of demand and supply, units, cost implications and pricing

Harnessing Bio Mass Energy – spatial implications; design, detail and assembly; operation; maintenance

Integration to energy grid

Environmental impacts

Review of case studies

Conservation and Recycling of Water – Rain water Harvesting (Term 3)

The source, implications of climate and weather

Rain Water Harvesting – national policies

Rain Water Harvesting- systems and principles, advantages and disadvantages, applications – domestic, industrial and large scale installations

Assessment of demand and supply, cost implications

Rain Water Harvesting – spatial implications; design, detail and assembly; operation; maintenance

Integration to supply line

Environmental impacts

Review of case studies

Part 3: Teaching and learning methods

Teaching and learning methods: The delivery of this Module will be through: Lectures, Case Study based Guest Lectures, Field Visits, Seminars, and Tutorials.

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

MO1 Awareness of of the global situation in the use of energy in buildings.

MO2 Awareness of of the global policies for energy reduction in the operation and use of buildings.

MO3 Knowledge of of the energy implications of buildings nationally.

MO4 Knowledge of of the national policies, strategies and drives for energy reduction in buildings.

MO5 Understanding of of the principles of renewable technologies such as solar power, wind power, bio mass energy, and conservation of water - rain water harvesting in arresting the energy needs of buildings.

MO6 Ability to to integrate renewable technologies in building design, understanding their spatial implications; material choice; construction, detailing and assembly; maintenance and applications in different situational contexts.

Hours to be allocated: 160

Contact hours:

Independent study/self-guided study = 30 hours

Face-to-face learning = 60 hours

Total = 90

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ubplxk-16-m.html) via the following link <https://uwe.rl.talis.com/modules/ubplxk-16-m.html>

Part 4: Assessment

Assessment strategy: Field Visits & Seminars Solar Power & Wind Power : Case Study based Presentations & Written Submission Year End Written Examination : Environment Question Paper 4 Sections: Energy Policy, Solar Power & Wind Power, Bio Mass, Rain Water Harvesting 2 Questions from each Section of which 1 should be answered totaling to 4 Questions. Descriptive Questions, Questions based on Short Notes, Case Study or Project based Questions

Assessment tasks:

Examination (First Sit)

Description: Written examination

Weighting: 60 %

Final assessment: Yes

Group work: No

Learning outcomes tested:

Written Assignment (First Sit)

Description: Written Submission – Rainwater Harvesting

Weighting: 10 %

Final assessment: No

Group work: No

Learning outcomes tested:

Written Assignment (First Sit)

Description: Written Submission – Bio Mass

Weighting: 10 %

Final assessment: No

Group work: No

Learning outcomes tested:

Presentation (First Sit)

Description: Individual presentation during lectures

Weighting: 10 %

Final assessment: No

Group work: No

Learning outcomes tested:

Presentation (First Sit)

Description: Group Presentation - Solar Energy

Weighting: 10 %

Final assessment: No

Group work: Yes

Learning outcomes tested:

Examination (Resit)

Description: Written Examination

Weighting: 60 %

Final assessment: Yes

Group work: No

Learning outcomes tested:

Written Assignment (Resit)

Description: Resubmission of Written Submission – Bio Mass for failed coursework or previous years mark for passed coursework

Weighting: 10 %

Final assessment: No

Group work: No

Learning outcomes tested:

Written Assignment (Resit)

Description: Resubmission of Written Submission – Rainwater Harvesting for failed coursework or previous years mark for passed coursework

Weighting: 10 %

Final assessment: No

Group work: No

Learning outcomes tested:

Presentation (Resit)

Description: Resubmission of Individual Presentation for failed coursework or previous years mark for passed coursework

Weighting: 10 %

Final assessment: No

Group work: No

Learning outcomes tested:

Presentation - Component B (Resit)

Description: Group presentation – Solar Energy previous years mark carried forward

Weighting: 10 %

Final assessment: No

Group work: Yes

Learning outcomes tested:

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Architecture and Environmental Design [SriLanka] MArch 2022-23