

Energy Efficiency in Buildings

INTRODUCTION TO THIS MODULE

2018-2019

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Energy Efficiency in Buildings

Lecturers introduction

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Energy Efficiency in Buildings

Students introduction

What do you expect for this module?

Answer the questions in the sheet given

Answer as many questions as you can.

Be as brief as possible.

It is not compulsory, but can help the module organisation.



Energy Efficiency in Buildings

2. Students introduction

What is your name?

What do you expect for this module?

Any other interesting comments?



Energy Efficiency in Buildings

3. Initial Survey

Answer the questions in the sheet given

Answer as many questions as you can.

Be as brief as possible.

It is not compulsory, but can help to the module organisation.



Energy Efficiency in Buildings

Aims of this module

To introduce students to the concepts and regulations for energy efficiency in buildings, giving an overview of how to determine identifying opportunities to reduce energy consumption and improve efficiency without reducing comfort levels.



Energy Efficiency in Buildings

Learning Outcomes

- Examine the concepts of energy efficiency and carbon emissions in buildings, its impacts and the regulations applied in the UK.
- Critically assess the best solutions for passive design, energy sources and systems for buildings at the design stage in new construction and refurbishment projects.
- Select appropriate sustainability certifications for buildings in the construction industry regarding energy efficiency.



Energy Efficiency in Buildings

Contents

- Energy and carbon emissions. General concepts
- Whole life cycle of buildings.
- Low, Passive, Zero and Plus Energy Buildings
- UK Building Regulations about energy efficiency
- Energy rating
- Energy consumption in buildings. The building envelope.
- Insulation, thermal bridging and solutions
- Passive design
- Heating, cooling and hot water
- Low carbon technologies
- Renewable energies
- Energy audits and performance indicators
- Considerations for sustainability certification. BREEAM and Passivhaus



Energy Efficiency in Buildings

Programming

Lectures

2nd October 2018 to 30th April 2019

1st Assignment

4th December 2018

2nd Assignment

2nd April 2019

Exam

Weeks 6th to 25th May 2019



Energy Efficiency in Buildings

Lesson explanation

Lectures

Theoretical explanation

Case studies

Practical exercises

Work individually or by groups

Assessment and discussion



Energy Efficiency in Buildings

Assessment

1 st Assignment	30%
2 nd Assignment	40%
Exam	30%
Total marks	100%



Energy Efficiency in Buildings

Assessment

1st Assignment

Report

Report of about 1500 words

Deadline. 4th December 2018



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Assessment

2nd Assignment

Case study

Report of about 2000 words
Presentation

Deadline. 2nd April 2019



Energy Efficiency in Buildings

Assessment

Exam

Multiple choice test
Length 1 hour