

Enhancing Sustainable Building Practices

Applying for this course:

The course is targeted at individuals who are interested in or work within the construction and building industry; as well as the general public to increase awareness on the building material and their environmental impact.

Individuals eligible to enrol in this programme should have completed compulsory schooling up to 65 years of age, and who have a good command of the English language.

Course Duration

This course is of 30 hours duration:

- Module 1 is of 6 hours duration
- Module 2 is of 7 hours duration
- Module 3 is of 7 hours duration
- Module 4 is of 10 hours duration - (including 2 hours assessment)

General pedagogical guidelines and procedures for this course:

The delivery of this course will be mainly held through a series of discussions and case studies. The trainer will also be holding lessons with the trainees which will consist of various presentations.

The learner will be assessed through ongoing assessments for each module. Each ongoing assessment will have 10% of the total marks. At the end of the course, the learner will also be assessed through a presentation.

Trainees are expected to deliver a presentation of 7-10 mins duration, about a topic of their choice (or we could just decide on the topic beforehand). This assessment will carry a total of 60% of the total mark.

The pass mark of both the ongoing assessments and presentation is 45%. Trainees are to obtain a pass mark in both of the assessments.

Module 1 Learning Outcomes – Fundamentals of Sustainable Building

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| ✓ Define sustainable building and explain its importance in contemporary construction practices. | ✓ Explain the purpose and benefits of certification methods in sustainable building. |
| ✓ Identify and describe key principles of sustainable building design and construction. | ✓ Compare and contrast different certification systems in terms of their requirements and focus areas. |
| ✓ Analyse the environmental, economic, and social benefits of sustainable building practices. | ✓ Assess the process of obtaining certification for a sustainable building project. |

<ul style="list-style-type: none"> ✓ Discuss the impact of sustainable building on climate change and resource conservation. 	<ul style="list-style-type: none"> ✓ Critically evaluate the role of certification methods in promoting sustainable building practices and their impact on the construction industry.
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Module 1 Assessment:

Assessment for this module consists of ongoing assessments which make up 10% of the total marks. The ongoing assessment will take into consideration the learner’s classroom participation throughout the entire module, and will take place by way of oral exercises, practical exercises, one-to-one questions, quizzes, roles plays and group activities.

Trainees are required to obtain a pass mark of 45%.

Module 2 Learning Outcomes – Climate Considerations at the Building Design Stage

<ul style="list-style-type: none"> ✓ Identify the key climatic factors specific to Malta that influence building design. ✓ Analyse the impact of Malta’s climate on building performance and occupant comfort. ✓ Develop design strategies that optimize building performance in response to Malta’s climatic conditions. ✓ Evaluate case studies of buildings in Malta to identify effective climate-responsive design solutions. ✓ Explain the role of insulation in enhancing building energy efficiency and thermal comfort. ✓ Identify various insulation materials and methods, including their thermal properties and suitability for different applications. ✓ Assess the performance of different insulation methods in reducing heat transfer and energy consumption. ✓ Develop insulation strategies tailored to the climatic conditions of Malta, considering both traditional and modern materials. 	<ul style="list-style-type: none"> ✓ Evaluate the cost-effectiveness and environmental impact of different insulation options for buildings in Malta. ✓ Define thermal loads and their significance in the context of building energy performance. ✓ Identify the components of thermal loads, including internal and external factors. ✓ Utilize thermal simulation software to model and predict the thermal behaviour of buildings. ✓ Interpret thermal simulation results to optimize building design for energy efficiency and occupant comfort. ✓ Develop strategies to manage and reduce thermal loads in buildings, with a focus on the specific climatic conditions of Malta.
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Module 2 Assessment:

Assessment for this module consists of ongoing assessments which make up 10% of the total marks. The ongoing assessment will take into consideration the learner’s classroom participation throughout

the entire module, and will take place by way of oral exercises, practical exercises, one-to-one questions, quizzes, roles plays and group activities.

Trainees are required to obtain a pass mark of 45%.

Module 3 Learning Outcomes – Green Building Methods and Materials

<ul style="list-style-type: none">✓ Identify and describe basic green building methods and their applications in construction.✓ Recognize various green building materials and tools used in sustainable construction.✓ Analyse the advantages and limitations of local traditional building materials and methods in contemporary green building.✓ Compare modern green building materials with traditional materials in terms of sustainability and performance.✓ Develop strategies for integrating local traditional building methods into modern sustainable construction projects.✓ Explain the life cycle of building materials from extraction to disposal.✓ Explain the importance of health and safety in the construction industry.✓ Identify common health and safety hazards in building construction and how they can be mitigated.✓ Interpret health and safety regulations and standards relevant to the construction industry.✓ Evaluate the effectiveness of health and safety measures in real-world construction scenarios.	<ul style="list-style-type: none">✓ Assess the environmental impact of different building materials, including their carbon footprint, resource consumption, and pollution.✓ Identify sustainable alternatives to conventional building materials and evaluate their benefits.✓ Define sustainable construction and explain its significance in the building industry.✓ Identify key sustainable construction practices and techniques used to reduce environmental impact.✓ Evaluate the effectiveness of various sustainable construction practices in real-world scenarios.✓ Develop a sustainable construction plan that incorporates energy-efficient, resource-conserving, and environmentally friendly practices.✓ Critically assess the challenges and opportunities associated with implementing sustainable construction practices in different contexts.
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Module 3 Assessment:

Assessment for this module consists of ongoing assessments which make up 10% of the total marks. The ongoing assessment will take into consideration the learner's classroom participation throughout the entire module, and will take place by way of oral exercises, practical exercises, one-to-one questions, quizzes, roles plays and group activities.

Trainees are required to obtain a pass mark of 45%.

Module 4 Learning Outcomes – Enhancing Building Efficiency through Landscaping

<ul style="list-style-type: none">✓ Explain the environmental benefits of green facades, walls, and roofs.✓ Identify the types of plants and materials suitable for creating green facades and roofs.✓ Analyse the impact of green facades and roofs on urban biodiversity and ecosystem health.✓ Explain the principles of energy-efficient design and its importance in sustainable building practices.✓ Identify the key elements and requirements of Document F and other relevant energy standards/regulations (R.E.S).✓ Assess the energy performance of buildings based on the guidelines provided in Document F.✓ Develop design strategies that comply with energy-efficient standards and improve building performance.✓ Evaluate the effectiveness of different energy-efficient design solutions through case studies and real-world examples.✓ Explain the importance of water efficiency and conservation in sustainable building design.	<ul style="list-style-type: none">✓ Identify various water-efficient technologies and fixtures used in buildings.✓ Analyse the impact of water conservation strategies on water usage and sustainability.✓ Develop a comprehensive water management plan that includes water-saving measures and conservation strategies.✓ Evaluate the effectiveness of different water conservation strategies through case studies and real-world applications.✓ Define smart growth and explain its principles and objectives in urban planning.✓ Identify the key components and benefits of smart growth systems.✓ Analyse the impact of smart growth systems on urban development, transportation, and community well-being.✓ Develop strategies for implementing smart growth principles in urban planning and development projects.✓ Evaluate case studies of smart growth initiatives to identify best practices and lessons learned.
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Module 4 Assessment:

Assessment for this module consists of ongoing assessments which make up 10% of the total marks. The ongoing assessment will take into consideration the learner's classroom participation throughout the entire module, and will take place by way of oral exercises, practical exercises, one-to-one questions, quizzes, roles plays and group activities.

By the end of the module, learners will also be assessed through a:

- Presentation – trainees will need to present a case study of a building that uses traditional local materials and sustainable construction practices. This assessment carries a total of 60% marks.

Trainees need to obtain a pass mark of 45% in both the ongoing assessments and the presentation.