

# FEM105e Materials Technology

**Level:** 1

**Credit Units:** 5 Credit Units

**Language:** ENGLISH

**Presentation Pattern:** EVERY SEMESTER

**E-Learning:** BLENDED - Learning is done MAINLY online using interactive study materials in Canvas. Students receive guidance and support from online instructors via discussion forums and emails. This is supplemented with SOME face-to-face sessions. If the course has an exam component, this will be administered on-campus.

## **Synopsis:**

FEM105 Materials Technology provides students an insight into material properties and their applicability in different buildings, facilities and event venues. Key considerations may include speed of construction, balancing durability with expediency and even corporate image. Students learn to evaluate each material that may make up a component, and several sub-systems that may make up a system to serve a function within a building or during an event. Several systems (e.g. weather screens, ventilation fans) would be used to illustrate these considerations so as to demonstrate the rationale for selecting certain materials.

## **Topics:**

- Properties of Major Classes of Materials and Performance of Materials
- Roles of Building Materials
- Classifications of Building Materials
- Need for Intervention
- Main Considerations in Material Selection
- Understanding Building Failures
- Material Selection in a Tender Process
- Quality Assurance and Control
- Handing Over Protocol
- Alternative Building Structures
- Green Building Systems
- Building Systems Function

## **Textbooks:**

Arthur Lyons: Materials for Architects & Builders (e-book) 5th Edition Routledge  
ISBN-13: 9781317667353-AA

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**Learning Outcome:**

- Define quality assurance/control in the application of material
- Describe the major classes of materials for structure and architectural materials
- Indicate the major strengths/weaknesses of common materials
- List the different criteria in the procurement and selection of material in a project
- Explain the inter-dependability with other discipline in the management of a building
- Demonstrate an awareness of alternative materials
- Demonstrate an ability to recommend materials selection for a built environment project
- Assess the quality of material used in a project

**Assessment Strategies:**

<b>Continuous Assessment Component</b>	<b>Weightage (%)</b>
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
TUTOR-MARKED ASSIGNMENT	10
TUTOR-MARKED ASSIGNMENT	14
<b>Sub-Total</b>	<b>30</b>

<b>Examinable Component</b>	<b>Weightage (%)</b>
Written Exam	70
<b>Sub-Total</b>	<b>70</b>

**Weightage Total** **100**