UNIVERSITI TEKNOLOGI MARA

EST530: Statics and Strength of Eco-Materials and –Products

Course Name (English)	Statics and Strength of Eco-Materials and –Products APPROVED
Course Code	EST530
MQF Credit	3
Course Description	This course comprises two fundamental components; basic understanding of static behaviour and strength characteristic of eco-materials and -products. It includes analysis of the mechanic of eco-materials and -products, in relation to their reactions to forces, stresses, and deformations in the structure. The axially loaded members, shear and bending moments, moment of inertia, and mechanical strength properties of eco-materials will be emphasized. This course delivers the concept and applications of statics and strength of eco-materials in construction, building and any static conditions. A clear understanding of the engineering mechanics and design principles will be covered for the specific static applications such as structure and construction made from eco-materials, which highlights the relationship between forces and materials deformation. This course provides the foundation for advanced engineering design courses.
Transferable Skills	None
Teaching Methodologies	Lectures, Blended Learning, Lab Work
CLO	CLO1 Explain the concept of rigid and deformable bodies of eco-materials and –products (LO1, C2) CLO2 Apply the different types of forces and structures (beam, column, truss and composites) (LO2, C3) CLO3 Analyze the statics and strength of eco-materials and –products by examining the stress distribution and strains for specific applications (building, structural, and any other constructed/built-up products made from eco-materials) (LO3, C4)
Pre-Requisite Courses	No course recommendations
Reading List	**Recommended Text** • **Anthony Bedford and Kenneth M. Liechti 2019, *Mechanics of Materials*, 2nd edition Ed., 8, Springer UK [ISBN: 9783030220822]** • **Russell Hibbeler 2015, *Engineering Mechanics: Statics*, 14th Edition Ed., 10, Pearson USA [ISBN: 978-013391892]**
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources