

Module Title:	Set Construction, Measurement and Structures
Language of Instruction:	English
Credits:	10
NFQ Level:	6
Module Delivered In	2 programme(s)
Teaching & Learning Strategies:	Lectures Tutorials Private study
Module Aim:	The aims of the module are: (1) to provide students with a knowledge of the techniques, methods and practices used in the construction of sets (2) To introduce students to the concept of sustainable building materials (3) To create an understanding of structures and the performance requirements of framed sets (4) To provide an understanding of materials, properties, junctions and their interaction with modern set construction techniques (5) To equip the student with the mathematical skills required for the study of the course (6) To develop a knowledge and understanding of the basic structural design and detailing associated with set construction (7) To develop a knowledge and understanding of measurement procedures and estimating skills

Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	To provide students with a knowledge of the techniques, methods and practices used in the construction of sets and the understanding of structures and their performance requirements
LO2	To introduce students to the concept of sustainable building materials and to provide an understanding of materials, properties, junctions and their interaction with modern set construction and design
LO3	To provide students with a knowledge of how to measure and calculate the area and volume of regular shapes, distances, and angles of right and non-right angled triangles
LO4	To provide students with a knowledge of how to draw a shear force and bending moment diagram for statically determinate members
LO5	To provide students with a knowledge of how to calculate the section properties for symmetrical and non-symmetrical sections (Tension/compression)
LO6	To provide students with a knowledge of how to analyse a simple truss using the method of sections and method of joints.

Pre-requisite learning
Module Recommendations <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>
No recommendations listed
Incompatible Modules <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>
No requirements listed

Module Content & Assessment

Indicative Content

Set construction Techniques

(a) Set construction techniques, methods and practices; (b) the understanding of structures and their performance requirements

Practical Scale Model Work

(a) Building practice / setting out (b) Materials handling and storage (c) Site safety. (d) Site visit to construction sets (e) Freehand Sketching through course related details

Materials properties

(a) properties and material science; (b) sustainable building materials

Measurement of Building Work for Set Production

(a) Measurement of simple film/stage set structure elements using current Agreed Rules of Measurement

Costing

(a) Plant costing (b) Cost of labour (c) Preparation of unit rates

Area and Volume

Perimeter, Area & Volume of Regular and Irregular Shapes

Trigonometry

(a) Solution of right angled triangles (b) Solving triangles with the sin & cosine rules

Types of Structures

(a) Types of structural materials - timber, steel, concrete (b) Cables and Ropes (c) Types of structures: Arch, Planar Truss, Beam/Girder, Flat plate, Braced and Rigid Frames, Folded Plate and Shell Structures, Cable Suspended Structure, (d) Foundations connections to structures

Structural Loading

(a) Types of structural loads - Dead, Live, Dynamic, Wind, Earthquake, Thermal, Settlement (b) load paths in structures (c) Forces Acting in Structures (d) Safety

Theory of Structures

(a) Section properties:- area, second moment of area, elastic modulus and radius of gyration (b) Shear force and bending moment diagrams (c) Theory of simple bending (d) Tension and compression members (e) Effective length and slenderness ratio (f) Axial capacity of compressive members (g) Analysis of pinned jointed frames (h) stiffness, stability, stress, strain

Assessment Breakdown	%
Continuous Assessment	50.00%
Project	50.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Short Answer Questions	Throughout the year students will complete short in class tests relating to theoretical and practical work as being completed during that phase of the project.	1,2,3,4,5,6	50.00	n/a

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	All encompassing projects that apply construction, measurement, costing, calculations and structural theory by designing, making and testing to breaking different types of load bearing structures	1,2,3,4,5,6	50.00	n/a

No Practical

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Every Week	4.00
Lecture	Every Week	4.00
Estimated Learner Hours	Every Week	3.00
Total Hours		11.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CGSDC_B	Bachelor of Science (Honours) in Set Design and Construction	3	Mandatory
CW_CGSDC_D	Bachelor of Science in Set Design and Construction	3	Mandatory