ENGG. MECHANICS - STATICS

OBJECTIVES

- isolate subsystem from all surrounding bodies and develop free-body diagram
- apply basic mathematical and physical principles to analyze
- identify appropriate structural systems along with forces and supports
- analysis of structures under static loads

UNITS

Unit 1: Introduction to Statics
Unit 2: Force Systems & Equilibrium
Unit 3: Distributed Forces
Unit 4: Beams and Friction

TEXTBOOK

Engineering Mechanics Statics
    - J.L. Meriam, L.G. Kraige, J.N. Bolton

REFERENCE

Solving Statics Problems in MATLAB
    - J.L. Meriam, L.G. Kraige

PROBLEMS

Unit 1

Chapter 2: Problem 2/1 to 2/78; excluding 2/29, 2/48, 2/56, 2,58

37 → class , 37 → self

Unit 2

Chapter 2: 2/19 - 2/100 ; excluding 2/88, 2/95, 2/99
  10 → class , 9 → self
Chapter 3: 3/1 - 3/45 ; excluding 3/22, 28, 29, 36, 38, 41
  20 → class , 19 → self

Unit 3

Chapter 5: 5/1, 2, 5, 8, 9, 22, 27
        5/47 - 61 ; excluding 54, 60
  10 → class, 10 → self

Annexure A : A/1 - A/19, A/35 - A/55
        Excluding A/5, 8, 10, 11, 13, 15, 47, 50, 52
  15 → class , 15 → self

Unit 4

Chapter 5: 5/101 - 5/111, 116 ; excluding 5/108, 109
  5 → class, 4 → self

Chapter 6 : 6/1 - 6/33 ; excluding 6/7, 10, 21, 22, 25, 26, 27, 29, 30
  14 → class, 10 → self

MARK BREAKUP

ISAs : 40m each $\xrightarrow[to]{reduces}$ 20m each ⟶ 40m

Experiential Component ⟶ 5m
(pick some problems and solve using
    programming)

Supervised Assignment (open book test) ⟶ 5m ⎤ → INTERNALS

ESA - 100m $\xrightarrow{reduces\ to}$ 50m ⎤ → END SEM

                                    TOTAL: 100m