



04-57-170 – STATICS

PART I: COURSE INFORMATION

College:	Technological Studies	Semester:	##
Department:	Civil Engineering Technology	Class Time:	##:## AM - ##:## PM
Course Title:	Statics	Class Location:	CTS-Building ##-Room ###
Course Number:	04-57-170	Instructor's Name:	####
Prerequisites:	04-76-105 Mathematics (1)	Office Location:	CTS-Building ##-Room ###
Units:	3	Office Extension:	####
Hours:	4	Office Hours:	(M & W) ##:## AM - ##:## PM
Section No.:	##	E-mail:	####@paaet.edu.kw

COURSE DESCRIPTION

Fundamental concepts of mechanics, units of measurements, force vectors: scalars and vectors, vector operations, equilibrium of a particle, the free body diagram, force systems, equilibrium of a rigid body; moment formulation, support reactions, simple trusses: method of joints, method of sections, internal loadings in beams, introduction to shear force and bending moment.

COURSE TEXTBOOK(S)

Engineering Mechanics Statics, R. C. Hibbeler, (Pearson)

RECOMMENDED TEXTS & OTHER READINGS

Vector Mechanics for Engineers Statics, Ferdinand P. Beer, (McGraw-Hill Higher Education)

PART II: COURSE OBJECTIVES

Upon completion of this course, the student should be able to do the following:

1. Understand the fundamental concepts of mechanics, as well as understand the Newton's three laws of motion.
2. Understand the units of measurements and have the ability to convert units from various systems.
3. Deal with force vectors and differentiate between vectors and scalars, as well as knowing the vector operations and calculate magnitude of the resultant of vectors by using parallelogram law and trigonometry along any axis.
4. Understand the equilibrium of particles and be able to calculate the magnitude of the resultant force of vectors by using the resolution of vectors into rectangular components (Scalar Notation).
5. The ability of drawing the free body diagram for any force system and write the corresponding equations of equilibrium.
6. Identify the moment of a force and calculate its value about a specified point. Define the moment of a couple and the ability of calculating the resultant moment.
7. Understand the equilibrium of a rigid body with the various supports and be able to calculate the support's reactions (by using equations of equilibrium) of simply supported beams and cantilevers with different types of loading (concentrated load, distributed load and moment of a force).
8. Analyze and determine the forces in members (compression, tension or zero members) in members of simple trusses by method of joints and method of section.
9. The ability to compute the internal normal, shear and moment forces in simply supported beams with various loading conditions by using the equilibrium of rigid bodies and the equations of equilibrium.
10. Introduction to Shear Force and Bending Moment with the relationship internal forces.



PART III: OUTLINE OF TOPICS AND SEQUENCE

Week #	Topic
1	Fundamental Concepts of Mechanics, Newton's Law, Units of Measurements
2	Force Vectors: Scalars and Vectors, Vector Operations, parallelogram law
3	Resultant Force of Vectors by Using the Resolution of Vectors
4	Equilibrium of a Particle, the Free Body Diagram
5	Moment Formulation, Moment of a Force
6	Couple Moment, Calculating the Resultant Moment
7	Force Systems, Equilibrium of a Rigid Body
8	Support and Calculation the Support's Reactions
9	Continue: Support and Calculation the Support's Reactions
10	Analysis of Trusses, Method of Joints
11	Analysis of Trusses, Zero Members
12	Analysis of Trusses, Method of sections
13	Internal Loadings in Beams
14	Introduction to Shear Force and Bending Moment

PART IV: GRADING

GRADE DISTRIBUTION

Student's final grade will be assessed based on the following:

Criteria	Percentage (%)
Attendance	5%
Laboratory	0%
Quizzes	20%
Homework Assignments	5%
Midterm Examinations	30%
Course Project	0%
Final Examination	40%
Total:	100

GRADING SCALE

Final grades in this course will be based on the following scale:

Final mark	Letter	Symbol	Final mark	Letter	Symbol
95-100	Distinction	A	90-94	Low Distinction	A-
87-89	High Very Good	B+	83-86	Very Good	B
80-82	Low Very Good	B-	75-79	High Good	C+
70-74	Good	C	66-69	Low Good	C-
63-65	High Satisfactory	D+	60-62	Low Satisfactory	D
0-59	Fail	F			



PART V: GENERAL COMMENTS

1. What to bring to the classroom for lectures, quizzes and examinations?
 - a. Lectures:
 1. Notebooks
 2. Textbook.
 3. Pen/pencil.
 4. Calculator.
 5. Geometry set (ruler, angle ruler, square set).
 - b. Quizzes:
 1. Pen/pencil.
 2. Calculator.
 3. Geometry set (ruler, angle ruler, square set).
 - c. Examinations:
 1. Pen/pencil.
 2. Calculator.
 3. Geometry set (ruler, angle ruler, square set).
 4. One A4 paper contains formulas and equations.
 - d. You will not be allowed to borrow any materials or tools from your classmates during quizzes and examinations.
2. Attendance Policy:
 - a. Attendance will be taken during the first 10 minutes, after that the attendance sheet will be removed.
 - b. If you arrive late, you will be counted as absent. NO EXCEPTIONS.
3. Absent Policy:
 - a. Any absence will not be tolerated except the following:
 1. Official sick leave (in official form).
 2. Death in immediate family members first or second degree.
 3. Escorting a patient for treatment abroad (official approval).
 4. Official task.
 - b. Absences will be accepted only with official documents submitted on your first attendance in class.
 - c. Any absence without an official excuse will have the following consequences:
 1. First warning in the event of an absence equivalent to one week.
 2. Second warning in the event of an absence equivalent to two weeks.
 3. Final denial from the course in the event of an absence equivalent to 3 weeks.
4. Mobile Policy:
 - a. Keep your mobile on silent mode during a lecture.
 - b. No electronic devices (mobiles, smart watches, laptops) are allowed in the classroom during examinations and quizzes except simple scientific calculators.
5. Academic Dishonesty and Plagiarism:
 - a. Copying someone else's work (homework, quiz, or exam) or committing literary theft are considered to be serious violations.
 - b. Please refer to the "Academic Dishonesty and Plagiarism" policies and regulations at PAAET.
6. Makeover Exam Policy:
 - a. There will be no makeovers for quizzes. NO EXCEPTIONS.
 - b. Makeover examinations will be given only for students who have official absence excuse.