

CB251 Testing of Materials

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laborator y	
None	2	3	2	2	0	3

COURSE AIM

This course aims to provide an introduction to the students to architecture, performance and properties of different engineering materials and the relation between the structure of Engineering materials and their properties. The course also aims to enable the students to have a good understanding and hand-on experience with the usage and testing of engineering materials.

COURSE WEEKLY CONTENTS

- 1 Introduction
- 2 Atomic Bonding
- 3 The Architecture of Solids
- 4 The Architecture of Solids
- 5 Testing Machines and Laboratory measuring devices
- 6 Mechanical Properties of Engineering Materials – Tension test
- 7 Mechanical Properties of Engineering Materials – Comp. test+ Midterm Exam
- 8 Mechanical Properties of Engineering Materials – Bending test
- 9 Mechanical Properties of Engineering Materials – Shear test
- 10 Mechanical Properties of Engineering Materials – Torsion test
- 11 Mechanical Properties of Engineering Materials – Hardness test and Impact
- 12 Dislocation and Strengthening Mechanisms
- 13 Fracture
- 14 Fatigue
- 15 Creep

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	20 Midterm	←	1 0	M A R K S		→	30
To be freely distributed among possible assessments							
8 to 12	←		2 0	M A R K S		→	20
13 to 15	←		1 0	M A R K S		→	10
16 or 17	40 Final						40
Total	Exams	Assign.	Quizzes	Reports	Present.	Lab.	100

REFERENCES

Textbook Science and Engineering: An Introduction, W. D. Callister Jr., John Wiley and Sons, 2011.

Other Testing of Materials, POPOR,E.P., Prentice-Hall Englewood cliffs, 2nd Edition, 1991.