

PHYS 474 (Materials Science) – B.Sc

Credit hours:(3+0)

Syllabus:

- States of Matter (Liquid, Crystalline and Vitereous)
 - Crystallography
 - Crytal Structures of Metals.
 - Metallography (Reflecting Optical Microscope, Transmission Electron Microscope and Specimen Preparation)
 - Mechanical Testing (Hardness and Tensile Tests)
 - Defects in Crystals (Point defects and dislocations)
 - Diffusion in Solids
 - Phase transformation and Phase diagrams
 - Stengthening mechanisms (Alloying, Cold work, Precipitation & fibre strenthening)
 - Heat treatment of Steel & TTT curves.
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References:

1. Elements of Physical Metallurgy
- Guy & Hren 3rd Edn. (Addison Wesley)
2. Elementary Solid State Physics
- M.A.Omar , Revised Printing
3. Materials Science and Engineering
- V. Raghvan 3rd Edn. Printice Hall

Exam Pattern:

1	Mid Term 1	15 Marks
2	Mid Term 2/Essay	15 Marks
3	Attendance/Quiz	05 Marks
4	Home work/Assignments	05 Marks
5	Final Exam	60 Marks
Total	-----	100 Marks