

**Syllabus for Mid Term Examination, 7<sup>th</sup> Semester**  
**B.S.C Mechanical Engineering, Session 2009**  
**UET Lahore, KSK Campus**

**1. Heat Mass Transfer**

Book Author (F. Incropera, 6<sup>th</sup> edition)

Introduction, Conduction Heat Equation, Fourier's Law, Heat Diffusion Equation in Cartesian and Cylindrical Coordinates, One dimensional Steady state heat conduction through plane composite walls, Cylinders and spheres with and without heat generation sources, Critical radius of Insulation, Conduction heat transfer through extended surfaces ( Up till fin efficiency).

**Note**

Paper will be comprising of numerical and derivations.

Above articles can be sorted out from the book and also from the lecture notes those are available at photocopy shop.

**2. Measurement and Instrumentation**

Complete slides of Lecture #1, 2, 3 and 4. These Slides are uploaded on site [09-mech-cr.weebly.com](http://09-mech-cr.weebly.com)

Further explanatory notes of these slides from the book are available at photocopy shop.

**3. Manufacturing Process**

Book Author (Groover)

Introduction to manufacturing processes, types of manufacturing process and their importance, Casting terminologies and its types, Defects of Casting and its allowances, Advantages of Casting, Molds and their types, Forming and its types, Forging and its all types, Rolling and its types, Drawing and its types, Extrusion, Spinning, Ironing

**Note**

Up till Forming slides have been uploaded. Search out the rest of slides by yourself.

#### ***4. Mechanics of Materials III***

Book Author (Vol.2 by E.J Hearn)

8.1, 8.2, 8.3, 8.12

Here are the following contents of lectures out of this book

Laws of stress transformations, Principal stresses, Stress Invariants, Laws of strain transformations, Principal strains, strain invariants, Compatibility Equations in 3-D, Stresses in 3-D cylindrical coordinates

Class problems and Problem Sheet placed at photocopy shop are also the part of syllabus.

#### ***5. Mechanical Vibrations***

Book Author (S.S.Rao.4<sup>th</sup> edition)

1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, 2.1, 2.2, 2.3 with their all sub-contents.

All class problems are also included.

**Prepared by**  
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