

First Course Handout

MSE301: Phase Transformation of Materials

Welcome
to
the Course on

**MSE 301: Phase Transformation
of Materials**

Units: 3-0-0-9

Instructor-in-Charge:

Dr. Krishanu Biswas

Professor

Department of Materials Science and Engg.,

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Lecture:

MWF: 17:10-18:00 Hour

Venue: L6

Meeting Hours : Tue., 4:30-5 PM

Objective

To understand phase transformations in metals, alloys and ceramics.

Brief Outline of the Course

- ✓ Basics (Thermo and Diffusion): 8-9 Lectures
 - ✓ Liquid- Solid Transformation: 5-6 lecture
 - ✓ Solid-Solid Transformations: 15 lecture
(diffusional and non-diffusional)
 - ✓ Phase Transformation in ceramics: 6 lectures
 - ✓ Problem solving classes : 5 Lectures
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Total

38-40 Lectures

Recommended Reading:

D.A. Porter and K.E. Easterling, Phase Transformations in Metals and Alloys, 2nd Ed., Chapman and Hall, London, 1992.

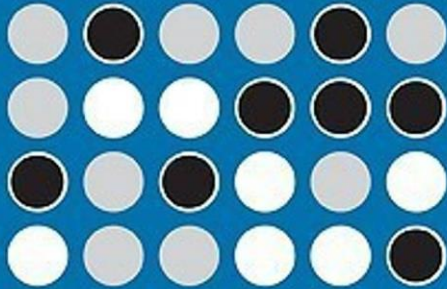
A.K. Jena and M.C. Chaturvedi, Phase Transformations in Materials, Prentice Hall:Englewood Cliffs, 1992.

H.K.D.H. Bhadeshia and R. Honeycombe, Steels: Microstructure and Properties, 3rd Ed., Elsevier/ Butterworth-Heinemann, Oxford, 2006.

Phase Transformations in Metals and Alloys

THIRD EDITION

DAVID A. PORTER,
KENNETH E. EASTERLING,
and MOHAMED Y. SHERIF



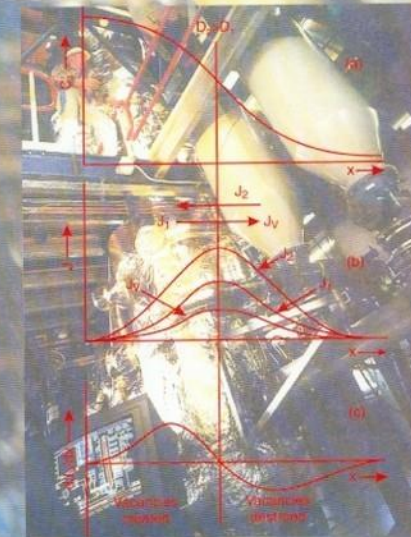
 CRC Press
Taylor & Francis Group

Phase Transformations in Materials

Jena, A.K.

Note: This is not the actual book cover

Phase Transformations in Materials



Romesh C. Sharma

TAs in the course

Name	e-mail	Office location	Phone(O)
Bhavi Chaturvedi	bhavic25@	Western Labs 204A	679 6802
B L Chetan	blchetan@	NA	NA

Evaluation: percentage break-up

Mid-Semester Exam	30
End Semester Exam	40
Quizzes & Problem-Solving sessions	20
Class Attendance	10
Total	100

Attendance Policy

You are expected to attend all the lectures. The lecture notes cover all the topics in the course, but these notes are concise, and do not contain much in the way of discussion, motivation or examples. The lectures will consist of slides (Powerpoint), spoken material, and additional examples given on the blackboard. In order to understand the subject and the reasons for studying the material, you will need to attend the lectures and take notes to supplement lecture slides. This is your responsibility. If there is anything you do not understand during the lectures, then ask, either during or after the lecture. If the lectures are covering the material too quickly, then say so. If there is anything you do not understand in the slides, then ask.

In addition, you are expected to supplement the lecture material by reading around the subject; particularly the course text.

Attendance will be collected using biometric tool. Please follow the instruction from Dean of Academic Affairs (DoAA) and will be used for grading.

Assignments and problem solving sessions

6 assignments in the course

Problem Solving session.

50% of the problems in the exam from assignments