

ESS 352000 PHYSICAL METALLURGY (II)

Prof. Ji-jung Kai 3 credits W3W4F3F4 Rm 406 Spring 2014

| CONTENTS | Schedule |
|--|---|
| Chapter 12 Diffusion in Substitutional Solid Solutions | 1 st , 2 nd weeks |
| Chapter 13 Interstitial Diffusion | 3 rd week |
| Chapter 14 Solidification of Metals (First Mid-term Examination) | 4 th , 5 th weeks |
| Chapter 15 Nucleation and Growth Kinetics | 6 th , 7 th weeks |
| Chapter 16 Precipitation Hardening | 8 th week |
| Chapter 17 Deformation Twinning and Martensite Reactions (Second Mid-term Examination) | 9 th , 10 th weeks |
| Chapter 18 The Iron-Carbon Alloy System | 11 th week |
| Chapter 19 The Hardening of Steel | 12 th week |
| Chapter 20 Selected Nonferrous Alloy Systems | 13 th week |
| Chapter 21 Failure of Metals | 14 th , 15 th week |
| Chapter 23 Thermally Activated Plastic Deformation (Third Edition) (Final Examination) | 16 th , 17 th weeks |

Text Book: Robert E. Reed-Hill, Lara Abbaschian, and Reza Abbaschian, "Physical Metallurgy Principles", Forth Edition, CENGAGE Learning, USA, 2010.

Grades:

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| First Mid-term Examination | (25%) |
| Second Mid-term Examination | (25%) |
| Final Examination | (25%) |
| Home Works | (20%) |
| Class Performance | (5%) |