**Lecture Calendar**

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| Week |  |  |
| 1-5 | Chap1 | Thermodynamics and Phase Diagrams       1.1  Equilibrium       1.2  Single Component Systems        1.3  Binary Solutions        1.4  Equilibrium in Heterogeneous Systems  1.5  Binary Phase Diagrams        1.6  The Influence of Interfaces on Equilibrium       1.7  Ternary Equilibrium       1.8  Additional Thermodynamic Relationships for Binary Solutions        1.9  The Kinetics of Phase Transformations  |
| 5-8 | Chap2 | Diffusion      2.1  Atomic Mechanisms of Diffusion      2.2  Interstitial Diffusion      2.3  Substitutional Diffusion      2.4  Atomic Mobility      2.5  Tracer Diffusion in Binary Alloys      2.7  High-Diffusivity Paths  |
| 8-12 | Chap3 | Crystal Interfaces and Microstructures      3.1  Interfacial Free Energy      3.2  Solid/Vapour Interfaces      3.3  Boundaries in Single-Phase Solids      3.4  Interphase Interfaces in Solids      3.5  Interface Migration  |
| 12-14 | Chap4 | Solidification      4.1  Nucleation in Pure Metals      4.2  Growth of a Pure Solid      4.3  Alloy Solidification |
| 14-16 | Chap5 | Diffusional Transformations in Solids      5.1  Homogeneous Nucleation in Solids      5.2  Heterogeneous Nucleation      5.3  Precipitate Growth      5.4  Overall Transformation Kinetics-TTT Diagrams      5.5  Precipitation in Age-Hardening Alloys      5.8  Eutectoid Transformations      5.9  Massive Transformations      5.10 Ordering Transformations  |
| 16-17 | Chap6 | Diffusionless Transformations            6.1  Characteristics of Diffusionless Transformations |
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