

| Lecture | Topic   | Notices                              |
|---------|---|--------------------------------------|
| 1       | Topic 1: Families of materials, applications and selection criteria |                                      |
| 2       | Topic 2: Bonding and intermolecular forces                          |                                      |
|         | Laboratory: cold work   |                                      |
| 3       | Topic 3: Structure of materials I                                   |                                      |
| 4       | Topic 3: Structure of materials II                                  |                                      |
|         | Laboratory: crystalline struct.                                     |                                      |
| 5       | Topic 4: Defects  |                                      |
|         | Exercises on structures   |                                      |
|         | Laboratory: polymers  |                                      |
| 6       | Topic 5: Diffusion  |                                      |
|         | Exercises on defects  | Quiz 1 (Bonding and structures)      |
|         | Laboratory: heat treatments   |                                      |
| 7       | Topic 6: Phase diagrams I   |                                      |
|         | Exercises on diffusion  |                                      |
| 8       | Topic 6: Equilibrium transformations in Fe-C                        | Deadline selection topic term paper  |
|         | Exercises on phase diagrams   | Quiz 2 (Defects and diffusion)       |
| 9       | Topic 7: Mechanical properties I                                    |                                      |
|         | Exercises on phase diagrams and mechanical properties               |                                      |
| 10      | Topic 7: Mechanical properties II                                   |                                      |
|         | Exercises on mechanical properties.                                 | Delivery group exercise on Bi-Sn.    |
| 11      | Topic 8: Heat treatments I  |                                      |
| 12      | Topic 8: Heat treatments II   |                                      |
| 13      | Topic 9: Metals   |                                      |
| 11      | Exercises on heat treatments  | Quiz 3 (Phase D.&Mech prop)          |
| 14      | Topic 10: Ceramic materials   |                                      |
|         | Exercises on ceramics   | Delivery group exercise on Brass.    |
| 15      | Topic 11: Polymers and composites I                                 |                                      |
| 16      | Topic 11: Polymers and composites II                                |                                      |
|         | Topic 11: Polymers and composites III                               |                                      |
|         | Exercises on polymers and composites                                | Submit term paper. Quiz 5 (Polymers) |
| 17      | Presentation Term papers  |                                      |