The exam will be closed book, closed notes.

You should understand the vocabulary terms sufficiently well to answer “fill in the blank” or multiple-choice type questions. In some instances (marked with *) you will need to have a “working knowledge” (i.e. be able to solve related problems).

**CH 2**
- covalent bond
- ionic bond
- metallic bond
- secondary bonding
- van der Waals bond
- valence electrons
- mole

**CH 3**:  
- unit cell
- crystal structure
- crystal system
- lattice
- atomic packing factor (APF)*
- body-centered cubic (BCC)
- face-centered cubic (FCC)
- hexagonal close-packed (HCP)
- coordination number
- linear atomic density
- planar atomic density

Also: draw appropriate planes and directions for given indices, and to determine the correct indices for given planes and directions.

**CH 4**
- alloy
- point defect
- vacancy

solid solution
- solute
- solvent
- self-interstitial
- substitutional solid solution
- interstitial solid solution
- dislocation
- anisotropic
- isotropic
- crystalline
- polycrystalline
- grain size*
- grain
- grain boundary
- twin

* these definitions may also require knowing and applying the related equation. For example, you should be able to determine the grain size if given a photomicrograph.