

CHEM 422 SYLLABUSES

Solid State Chemistry: An Introduction, Fourth Edition by Lesley E. Smart, Elaine A. Moore

List of Topics	No. of Weeks	Contact Hours
Types of solids and their external structure	2	4
Introduction to symmetry in crystalline solids, 7 unit cell shapes,	2	4
Internal structure of crystalline solids, Close packing of spheres, Intercalation of alkali metals into graphite	2	4
Calculation of Miller indices, Crystallographic Planes, Crystal directions,	2	4
X-ray Crystallography, The reciprocal lattice and Laue symmetry, Data collection, space group determination, Structure solution	1	2
X-ray powder diffraction by solids	1	2
Ionic radii and the hard sphere model, Structures of AX solids, Rock salt, Cesium chloride, Platinum sulphide, Structures of AX ₂ solids, Cadmium iodide, Cadmium chloride	2	4
Imperfections in Solids	1	2
Approaches for solid state synthesis including electrochemical synthesis of Co-TCNQ materials.	1	2
Inorganic industries including Glass, Cement, and Steel	2	4
Total Hours		30