LSC 524 — Biomaterials

l . Historical perspective and use of biomaterials Types of biomaterials and their synthesis o Ceramics / composite o Polymeric: Natural & Synthetic o Metallic

2. Structure — function correlation: relevance and application,Surface properties:roughness, surface energy
   Bulk properties: crystallinity, mechanical and degradation

3. Biological Responses to Implants
   Protein adsorption and its behaviour at interface
   Cell proliferation
   Alterations in platelet, coagulation, and fibrotic properties Infection

4. Preparation of Biocompatible Materials Non-fouling surfaces
   Functional coatings and derivatizations

5. Special Topics: Tissue Engineering and Controlled drug delivery

Course readings / References

l . Biomaterials Science. Eds, Buddy Ratner, et. Al. 2nd edition. Academic Press
2. Tissue Engineering, Palson O Bernhard, Pearson Education
3. All biomaterials, tissue engineering and nanotechnology related research articles will be part of discussion and reading.