**COURSE SYLLABUS**

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| **Course Title**：Biomaterials Processes and Applications | | | | |
| **Credits / Hours** | 3/3 | **Course Number** |  | **□Required ■Elective** |
| **Course Description**  This course is an introduction to the field of biomaterials, with a focus on the processing and application of materials used in medical devices and implants. Topics covered include the properties of biomaterials, processing methods, surface modification, biocompatibility, and applications in tissue engineering, drug delivery, and medical device design. The course will also cover regulatory considerations and ethical issues related to the use of biomaterials in medicine.  **Course Goals and Objectives:**   1. To introduce students to the properties and characteristics of biomaterials 2. To provide an understanding of the processing methods used in the manufacture of biomaterials 3. To explore the use of biomaterials in medical device design, tissue engineering, and drug delivery 4. To examine the regulatory considerations and ethical issues related to the use of biomaterials in medicine   Textbook:  Prepared by professors and other references (papers) | | | | |
| **Course Topics** | | | | |
| **Topic** | | **Content** | | |
| Topic 1 | | Introduction to Biomaterials | | |
| Topic 2 | | Properties of Biomaterials | | |
| Topic 3 | | Processing of Biomaterials | | |
| Topic 4 | | Surface Modification of Biomaterials | | |
| Topic 5 | | Biocompatibility of Biomaterials | | |
| Topic 6 | | Applications of Biomaterials in Tissue Engineering | | |
| Topic 7 | | Applications of Biomaterials in Drug Delivery | | |
| Topic 8 | | Medical Device Design with Biomaterials | | |
| Topic 9 | | Regulatory Considerations for Biomaterials in Medicine | | |
| Topic 10 | | Regulatory issues in nano-biomedical materials | | |
| Topic 11 | | Ethical Issues in Biomaterials | | |