

BMEN6315 - Advanced Biomaterials Technologies and Applications to Medical Devices

[BMEN 6315](#) Advanced Biomaterials Technologies and Applications to Medical Devices (3 semester credit hours) This course will build upon graduate students' knowledge of biomaterials for biomedical engineering focused on development of materials for implantable medical devices (e.g., defibrillators, pacemakers, artificial heart valves, stents, catheters), medical implants (e.g., dental implants, artificial hips, knees, and elbows), implantable biosensors and drug delivery MEMS devices, and materials for a new generation of surgical instruments. Students will learn the fundamentals of novel bioengineering materials and technological developments for insertion of materials into commercial medical products, and they will have the opportunity to work in the laboratory to learn how to produce some of the bioengineering materials (e.g., biocompatible ultrananocrystalline diamond coatings, biocompatible oxides films, and flexible polymers for implantable electronics and neural stimulation electrodes). (3-0) Y