

Recommended ECET Biomedical Sequence

NOTE: This is the recommended set of classes that students should take if they want to pursue Biomedical Engineering Technology as a career and be fully prepared for the field. In reality, students may take any combination of these classes, as long as all prerequisites are met.

ECET 310 Biomedical Instrumentation (New course - - not yet in catalog.) **(ECET Elective)**

Class 3, cr. 3. Prerequisite: ECET 154.

An introduction to physiological variants, the concept of measurements and problems encountered in measurements from a living human body. Detail study of transducer principles and circuit techniques in measurement in circulatory, digestive, muscular and nervous systems. System approach to intensive care monitoring and data acquisition. Evaluation of biomedical instruments to meet performance specifications and electrical safety.

ECET 410 Physics Of Radiologic Imaging (New course - - not yet in catalog.) **(ECET Elective)**

Class 3, cr. 3.

Diagnostic imaging is among the rapidly advancing fields of non-invasive clinical medicine. This course will cover the physics principles behind imaging techniques. Quality assurance of diagnostic x-ray equipment and radiation safety also will be discussed. This course may be used as a Science/Math Elective.

ECET 357 Real-time Digital Signal Processing **(ECET Elective)**

Class 3, lab. 3, cr. 4. Prerequisites: ECET 209 and ECET 207.

Architecture, instruction set, and hardware and software development tools associated with a fixed point general purpose DSP VLSI processor are studied. Fundamental principles associated with the processing of discrete time signals are introduced. Common applications such as waveform generation, FIR and IIR digital filtering, and DFT- and FFT- based spectral analysis and filtering are implemented.

BIOL 213 Human Anatomy & Physiology **(Math/Science Elective)**

Class 3, lab. 2, cr. 4. Prerequisite: CHM 103 or 1 year high school chemistry.

An introduction to human anatomy and physiology. Topics include the basic structural and functional organization of the human body, cellular anatomy and physiology, body tissues, the integument, and the skeletal, muscular and nervous systems. Lecture material is reinforced and expanded upon during laboratory studies of cadaver-based gross anatomy, histology, and physiology.

BIOL 214 Human Anatomy & Physiology **(Math/Science Elective)**

Class 3, lab 2, cr. 4. Prerequisite/Corequisite: CHM 119 either during BIOL 213 or BIOL 214.

A continuation of BIOL 213. Topics include: structure and function of the endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary and reproductive systems; basic hematology, fluid and electrolyte balance and acid-base balance. Lecture material is reinforced and expanded upon during laboratory studies of cadaver-based gross anatomy, histology, and physiology.

CHM 119 General Chemistry **(Math/Science Elective)**

Class 2, lab. 3, cr. 3. Prerequisites: 1 year high school chemistry with a C or CHM 103 with a C.

A survey of general, organic, and biological chemistry. Intended primarily for students in the nursing program.