

COMPUTER ENGINEERING (CEEN) - ENGINEERING ELECTIVES

- MATH 414** **Fourier Series and Wavelets** (3-0) 3 Credits - Fourier series and wavelets with applications to data compression and signal processing. *Prerequisite: MATH 304, MATH 309, MATH 311, or MATH 323.*
- MATH 442** **Mathematical Modeling** (3-0) 3 Credits - The construction of mathematical models from areas such as economics, game theory, integer programming, mathematical biology and mathematical physics. *Prerequisites: MATH 304, MATH 309, MATH 311, or MATH 323; MATH 308 or equivalent.*
- MATH 471** **Communications and Cryptography II** (3-0) 3 Credits - Additional topics in coded communications; information and entropy, elliptical curves, error corrections, quantum methods. *Prerequisites: MATH 470 or consent of instructor.*
- MEEN 221** **Statics and Particle Dynamics** (3-0) 3 Credits - Application of the fundamental principles of Newtonian mechanics to the statics and dynamics of particles; equilibrium of trusses, frames, beams and other rigid bodies. *Prerequisites: For non-mechanical engineering majors; admission to an engineering major; MATH 251 or MATH 253 or registration therein; PHYS 218.*
- MEEN 222/**
MSEN 222 **Materials Science** (3-0) 3 Credits - Mechanical, optical, thermal, magnetic and electrical properties of solids; differences in properties of metals, polymers, ceramics and composite materials in terms of bonding and crystal structure. *Prerequisites: CHEM 102, or CHEM 104 and CHEM 114, or CHEM 107 and CHEM 117; PHYS 218. Cross Listina: MSEN 222/MEEN 222.*
- MEEN 315** **Principles of Thermodynamics** (3-0) 3 Credits - Theory and application of energy methods in engineering; conservation of mass and energy; energy transfer by heat, work and mass; thermodynamic properties; analysis of open and closed systems; the second law of thermodynamics and entropy; gas, vapor and refrigeration cycles. *Prerequisites: MEEN 225; MATH 251 or MATH 253; junior or senior classification.*
- PHYS 221** **Optics and Thermal Physics** (3-0) 3 Credits - Wave motion and sound, geometrical and physical optics, kinetic theory of gases, laws of thermodynamics. *Prerequisites: PHYS 208; MATH 152 or MATH 172; registration in MATH 221, MATH 308.*
- PHYS 222** **Modern Physics for Engineers** (3-0) 3 Credits - Atomic, quantum, relativity and solid state physics. *Prerequisites: PHYS 208 or PHYS 219; MATH 308 or registration therein.*