

Engineering Management Specializations

Specializations (or concentrations) include those listed below and does not include suggested technical electives.

Civil Engineering (28 Credit Hours)

CAE 100 Introduction to Engineering Drawing and Design
CAE 101 Introduction to AutoCAD Drawing and Design
CAEE 286 Introduction to Mechanics
CAEE 287 Mechanics of Solids 2
MMAE 305 Dynamics
CAE 301 Hydraulics and Hydrology
CAE 302 Fluid Mechanics and Hydraulics
CAE 312 Engineering Systems Analysis
CAE 315 Materials of Construction
Plus 1 of the following:
CAE 303 Structural Design
CAE 323 Soil Mechanics

Architectural Engineering (29 Credit Hours)

CAE 100 Introduction to Engineering Drawing and Design
CAE 101 Introduction to AutoCAD Drawing and Design
CAEE 286 Introduction to Mechanics
CAEE287 Mechanics of Solids 2
CAE 208 Thermal-Fluid Engineering 1
CAE 209 Thermal-Fluids Engineering 2
CAE 331 Building Science
CAE 312 Engineering Systems Analysis
CAE 334 Illumination and Acoustics
One of the following:
CAEE 383 Electrical & Electronic Circuits
CAEE 461 Plumbing and Fire Protection

Material Science and Engineering (28 Credit Hours)

MMAE 100 Introduction to the Profession*
MS201 Materials Science
MMAE 200 Introduction to Mechanics
MMAE 202 Mechanics of Solids 2
MMAE 232 Design for Innovation
MMAE 365 Structure & Properties of Materials 1
MMAE 370 Materials laboratory 1
MMAE 463 Structure & Properties of Materials II
Students must also take two of the following courses:
MMAE 371 Engineering Materials
OR
MMAE 372 Design of Aerospace Materials laboratory
MMAE 470 Introduction to Polymer Science
MMAE 468 Introduction to Ceramics
OR
MMAE 472 Advanced Aerospace Materials
OR
MMAE 482 Composites
MMAE 476 Materials Laboratory II
MMAE 485 Manufacturing Process

Mechanical Engineering (29/30 Credit Hours)

MMAE 100 Introduction to the Profession*
MS201 Materials Science
MMAE 200 Introduction to Mechanics
MMAE 202 Mechanics of Solids 2
MMAE 232 Design for Innovation
MMAE 313 Fluid Mechanics
MMAE 315 Aerospace Laboratory I
OR
MMAE 319 Mechanical Laboratory II
MMAE 320 Thermodynamics
Students must also take one of the following courses:
MMAE 302 Mechanics of Solids II
MMAE 321 Applied Thermodynamics
MMAE 322 Heat and Mass Transfer with Laboratory
OR
MMAE 323 Heat and Mass transfer
MMAE 332 Design of Machine Elements
MMAE 547 Computer-Integrated Manufacturing Technologies
MMAE 557 Computer-Integrated Manufacturing Systems
MMAE 589 Applications in Reliability Engineering I
MMAE 590 Applications in Reliability Engineering II

*Two hours of MMAE 100 applies to the Introduction to the Profession requirement and one hour applies to the specialization.

Electrical Engineering (28 Credit Hours)

ECE 100 introduction to the Profession*
CS 115 and CS 116 Object-Oriented Programming 1 and 2
(Fulfills CS requirement and 2 hours to engineering core)
EE 211 and 213 Circuit Analysis 1 and 2 (w/lab)
ECE 218 Digital Systems
MATH 333 Matrix Algebra and Complex Variables
ECE 307 Electrodynamics
ECE 308 Signals and Systems
ECE 311 Engineering Electronics

Chemical Engineering (30 Credit Hours)

CHE 100-Introduction to the Professions
(uses 2 hours of ITP and 0 towards core credit hours)
CHE 101-Introduction to the Profession 2
CHEM 125 – Chemistry 2
CHEM 237/239-Organic Chemistry 1 & 2
CHEM 343 Physical Chemistry 1
CHE 202 – Material and Energy Balances
CHE 302-Heat and Mass Transfer Operations
CHE 301 – Fluid Mechanics
CHE 351-Thermodynamics 1
CHE 451 – Thermodynamics II

Biomedical Engineering: Cell and Tissue Track (30 Credit Hours)

BME 100
(uses 2 hours of ITP and one towards core credit hours)
CHEM 125 – Chemistry 2
BIOL 115 and 117-Human Biology & lab
ECE 211- Circuit Analysis 1
(CAEE 383 covers the same topics and more)
MMAE 200 Intro to Mechanics
MS 201-Material Science
BME 200-Applications in MATLAB
BME 315-Instrumentaion laboratory
BME 330-Analysis of Biosignals & Systems
CHE 202-Material & Energy Balances
BME 301-Biofluid Mechanics

Biomedical Engineering: Medical Imaging Track (29-30 Credit Hours)

BME 100
(uses 2 hours of ITP and one towards core credit hours)
CHEM 125 – Chemistry 2
BIOL 115 and 117-Human Biology & lab
ECE 211- Circuit Analysis 1
(CAEE 383 covers the same topics and more)
CS 201-Accelerated Intro to computer Science
(uses 2 credits from CS requirement and adds 2 to the core credit hours)
PHYS 224-Physics 3 or CHEM 237-Organic Chemistry
BME 200-Applications in MATLAB
BME 315-Instrumentaion laboratory
BME 330-Analysis of Biosignals & Systems
BME 309-Biomedical Imaging and Sensing
BME 310-Biomaterials

Biomedical Engineering: Neural Engineering Track (30 Credit Hours)

BME 100
(uses 2 hours of ITP and one towards core credit hours)
CHEM 125 – Chemistry 2
BIOL 115 and 117-Human Biology & lab
ECE 211/213-Circuit Analysis 1 & 2
ECE 218-Digital Systems
ECE 212/214-Analog & Digital Labs 1 & 2
CS 115-Object Oriented Programming
(uses 2 credits from CS requirement and adds 0 to the core credit hours)
CHEM 237-Organic Chemistry
BME 200-Applications in MATLAB
BME 315-Instrumentaion laboratory
BME 330-Analysis of Biosignals & Systems