School of Engineering and Engineering Technology
Bachelor of Science
Mechanical Engineering (BSME)
2020-2021
Approved Electives List

Note: Students must check that they meet any specified prerequisites for their selected electives.

GENERAL EDUCATION, THEOLOGY, AND VOCATION ELECTIVES
BIBLICAL ENGAGEMENT ELECTIVES:
- Any BIBL numbered 2000 or above

CIVIC ENGAGEMENT ELECTIVES:
- Any ECON, HIST, INTL, POLS, or
- CRIJ 2313 - Criminal Law
- CRIJ 3213 - Justice and Human Rights
- CRIJ 3263 - Constitutional Criminal Procedure
- CRIJ 4233 - International Human Trafficking
- CRIJ 4263 - International Criminal Law

INGENUITY ELECTIVES:
- Cross-Cultural (CCLT 3203 only)
- Fine Arts (HUMA)
- Literature (All ENGL 2000-level courses *except* ENGL 2603, ENGL 3213, ENGL 3223,
    Further exceptions ENGL 3931, ENGL 4113, ENGL 4923, ENGL 4933, ENGL 5113)
- Philosophy (PHIL)
- Music (MUSC)
- Foreign Language (must have two semesters in one foreign language)

THEOLOGICAL ENGAGEMENT ELECTIVES:
- 2000-level or above BIBL
- CCLT 3103 - Cultural Anthropology
- CCLT 3203 - Religions Of The World
- CCLT 4103 - Biblical & Strategic Paradigms for Missions
- CMIN 3303 - Evangelism And Discipleship
- CMIN 3403 - Ministry of Teaching
- THEO 3003 - History of the Church
- THEO 3103 - Christian Doctrine
- THEO 3063 - Christian Ethics
- THEO 3133 - The History of Christian Thought
- THEO 3203 - Christian Apologetics
- THEO 4941-4993 - Special Topics classes that engage Theology and specific disciplines.

MATH Electives
- MATH 3103 Biomathematics
- MATH 3453 Statistical Methods
- MATH 3603 Mathematical Modeling
- MATH 3703 Abstract Algebra
- MATH 3903 History of Math
- MATH 4253 Operational Research
- MATH 4233 Stochastic Processes
- MATH 4403 Numerical Analysis (Spring only)
- MATH 4513 Quality Assurance and Experiment Design
- MATH 4523 Statistical Quality Control
- MATH 4653 Actuarial Mathematics
- MATH 4953 ST: Complex Variables
- MATH 4933 ST: Time Series Analysis
- MATH 4963 ST: Number Theory

Note: MATH 3503 Mathematical Concepts is NOT an approved MATH elective

BSME Technical Electives (Offered by ME Department):

ENGR 4973 ST: Sustainable Energy
ENGR 4973 ST: Cross -Cultural Engineering
MEGR 4143 Experiment Design (Spring)
MEGR 4713 Applied Thermodynamics
MEGR 4933 ST: Engineering Optimization
MEGR 4943 ST: Applied Aerodynamics (Fall)
MEGR 4953 ST: Finite Elements
MEGR 4953 ST: Compressible Flow (Spring)
MEGR 4963 ST: Experimental Mechanics of Composite Materials
MEGR 4963 ST: Industrial Design
MEGR 4973 ST: Advanced Mechanics of Materials Testing
MEGR 4973 ST: Maker Machines
MEGR 4983 ST: Compressible Flow
MEGR 4983 ST: Numerical Heat Transfer & Fluid Dynamics
MEGR 4993 ST: Spacecraft Design and Operations

Note: If the Technical Elective you desire to take is not listed on the Course Schedule in a given semester, then it is not being offered that semester.

Note: Alternative or additional Special Topics (ST) offered based on demand and Faculty availability

BSME Technical Electives (Outside of Mechanical Engineering):

ENGR 4413 Robotics And Manufacturing Applications (Spring)
ENGR 4653 Advanced Engineering Analysis (Fall)
MJEG 3204 Nondestructive Evaluation (Spring)
MJET 3313 Materials Science of Joining (Spring)
MJET 3413 Design Topics in Materials Joining (Spring)
MJET 3502 Materials Testing and Characterization Laboratory (Fall)
CVGR 3313 Structural Analysis (Fall)
CVGR 3713 Construction Engineering (Fall)
CVGR 4314 Concrete Construction and Design
CVGR 4504 Water and Wastewater Engineering
EEGR 3233 Introduction To Microcontrollers (Fall)
EEGR 3523 Mechatronics (Spring)
EEGR 4233 Introduction To Microprocessors And Microcomputers (Fall)
EEGR 4283 Digital Signal Processing (Spring)
EEGR 4513 Electromagnetic Fields And Waves (Fall)
BEGR 3424 Biosignal Analysis (Spring)
BEGR 3614 Biomechanics I (Fall)

STEM Electives   *Note: these are STEM Electives, NOT Technical Electives

MJTC 3000+, METC 3000+, DSTC 3000+, GETC 3000+

Note: All BSME Technical Electives can be used as a STEM Elective, but the converse is NOT true.

Examples of Engineering Technology courses acceptable as STEM Electives:
MJTC 4944 Spec Topics in Joining Materials
DSTC 3423 Technical Design Elements II
DSTC 3433 Solids Modeling
GETC 3323 Modern Manufacturing Methods
EETC 3343 Instrumentation and Controls

Examples of Engineering Technology courses NOT ACCEPTABLE as STEM Electives:
(Due to overlapping content with required BSME Courses)
METC 4412 Kinematics of Machines
METC 4433 Elements of Machine Design
METC 4513 Fluid Mechanics