School of Engineering and Engineering Technology

ENGINEERING, B.S.
MATERIALS JOINING ENGINEERING (MJE)
2024-25
APPROVED ELECTIVES LIST
(Version date: 5/14/2024)

NOTE: Students should be careful to note and meet specified prerequisites for their selected elective courses.

GENERAL EDUCATION, LETU THEOLOGY, AND VOCATION ELECTIVES

Biblical Engagement Electives
Any BIBL course numbered 2000-level or above

Civic Engagement Electives
Any HIST, INTL, POLS, ECON, or CRIJ

Humanities & Fine Arts Electives (Formerly Ingenuity Electives)
Cross-Cultural (CCLT 3203 only)
Fine Arts (HUMA)
Literature (All ENGL 2000-level or above courses except ENGL 2603, ENGL 3213, ENGL 3223, ENGL 3931, ENGL 4923, and ENGL 4933)
Philosophy (PHIL)
Music (MUSC)
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 3063 - Christian Ethics
THEO 3103 - Christian Doctrine
THEO 3133 - The History of Christian Thought
THEO 3203 - Christian Apologetics
THEO 4941-4993 - Special Topics classes that engage Theology and specific disciplines.

MJEG Technical Electives (Offered by Department of Welding/Materials Joining Engineering):
Catalog Requirement: Any 3000+ Materials Joining Engineering courses (MJEG). Acceptable examples include:
MJEG 4023 Welding Procedure Devel and QC (Fall only, Even)
MJEG 4353 Automation in Welding and Mfg (Fall only, Odd)

Alternative or additional Special Topics (ST) offered based on demand and Faculty availability. If admitted to Engineering Graduate Program 4+1, graduate version of the above courses can also be taken to meet the elective requirement.
Approved STEM Electives (Undergraduate)

**Catalog Requirement:** A STEM elective includes all MJEG Technical Electives (above), 3000+ ENGR, Math, Science, Business, and 2000+ Computer Science

**Example Engineering Technical Electives (Outside of MJEG) which count for STEM:**
- BEGR 3424 Biosignal Analysis (Spring)
- BEGR 3614 Biomechanics I (Fall)
- CVGR 3313 Structural Analysis (Fall)
- CVGR 3713 Construction Engineering (Fall)
- CVGR 4314 Concrete Construction and Design
- CVGR 4504 Water and Wastewater Engineering
- CVGR 4614 Hydrology
- ENGR 4973 ST: Sustainable Energy
- ENGR 4973 ST: Cross-Cultural 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)
- MEGR 3513 Fluid Mechanics (Fall Only)
- MEGR 3713 Thermodynamics
- MEGR 4723 Heat Transfer (Spring Only)
- MEGR 4443 Machine Design (Fall Only)
- MEGR 4423 Mechanical Vibrations (Fall Only)
- MEGR 4143 Experiment Design (Spring)
- MEGR 4713 Applied Thermodynamics
- MEGR 4953 Finite Element Analysis (Fall)
- MEGR 4963 ST: Experimental Mechanics of Composite Materials
- MEGR 4963 ST: Industrial Design
- MEGR 4963 ST: Principles of Aerodynamics
- 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

**Examples of Engineering Technology courses acceptable as STEM Electives:**
- DSTC 3423 Technical Design Elements II
- DSTC 3433 Solids Modeling
- GETC 3323 Modern Manufacturing Methods
- EETC 3343 Instrumentation and Controls

**If admitted to Engineering Graduate Program 4+1, the following courses can be used for STEM Electives, as well as classes listed above which have a parallel graduate version**
- ENGR5913 Intro. to Sensors (IoT/MEMS) (Fall)
- ENGR6103 Christian Approach to Engineering Leadership (Spring)
- ENGR6223 Advanced Engineering Mathematics (Fall)
- ENGR6513 Design and Analysis of ENGR Exps (Fall)
- EEGR5923 Electrical Power Engineering (Fall)
- EEGR6973 Estimation Theory (Spring)
- MEGR5973 Advanced Mechanics of Materials (Fall)