School of Engineering and Engineering Technology

ENGINEERING, B.S.

MATERIALS JOINING ENGINEERING (MJE)

2021-22

APPROVED ELECTIVES LIST

(Version date: 5/12/2021)

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
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 or above courses ***except*** ENGL 2603, ENGL 3213, ENGL 3223, ENGL 3931
Further exceptions ENGL 4113, ENGL 4923, ENGL 4933, and 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 Mission
CMIN 3303 Evangelism & Discipleship
CMIN 3403 Ministry of Teaching
THEO 3003 History of the Church
THEO 3063 Christian Ethics
THEO 3103 Christian Doctrine
THEO 3133 The History of Christian Thought
THEO 3202 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 4103 Joining Methods II (Spring 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)