

Engineering Core

Take a course from two of the five groups.

1. Statics/Dynamics

EGM 2500 **Elements of Statics** (PHY 2048, MAC 2313)...2

EGM 2511 **Elements of Mechanics-Statics** (PHY 2048, MAC 2313) ..3

EGM 3400 **Elements of Dynamics** (EGM 2500 or EGM 2511, MAC 2313).. .2

EGM 3401 **Engineering Mechanics-Dynamics** (EGM 2500 or EGM 2511, MAC 2313).. .3

2. Thermodynamics/Heat Transfer/Fluid Flow

ECH 3023 **Material and Energy Balances** (CHM 2046, PHY 2048, MAC 2312, PHY 2049, MAC 2313). .5

ECH 3264 **Elementary Transport Phenomena** (ECH 3023, EGM 3311 or MAP 2302). .3

ECH 4403 **Separation and Mass Transfer Operations** (ECH 3264, ECH 4123). . .3

ECH 4224L **Fluid and Energy Transfer Operations Laboratory** (ECH 3101, ECH 3203, ECH 3223, ENC 2210, ECH 4714L) . .2

ECH 4404L **Separation and Mass Transfer Operations Laboratory** (ECH 4403, ECH 4224L, ECH 4714L). . .2

EGN 3353C **Fluid Mechanics**.. .3

ABE 3612 **Heat and Mass Transfer in Biological Systems** (MAP 2302 or EGM 3311 and EML 3007, CGS 2425 or equivalent). .3

EML 3007 **Elements of Thermodynamics and Heat Transfer** (MAC 2313, PHY 2048, or CHM 2041 or CHM 2045).. .3

EML 3100 **Thermodynamics 1** (MAC 2313, PRY 2048, or CHM 2041 or CHM 2045).. .3

CWR 3201 **Hydrodynamics** (EGM 2511, EGM 3400, MAP 2302 or EGM 3311)...4

3. Engineering Materials

EMA 3010 **Materials** (CHM 2045).. .3

ECH 4824 **Materials of Chemical Engineering** (ECH 4123).. .2

EEL 3396 **Solid-State Electronic Devices** (EEL 3111).. .3

ABE 3652C **Physical and Rheological Properties of Biological Materials** (MAC2313, PHY2048 and CHM2045). . .3

CGN 3501C **Civil Engineering Materials** (CES 3102, EGM 3520, SUR 2322C or consent of instructor).. .4

4. Engineering Economy/Management

ECH 4604 **Process Economics** (ECH 3203, ECH 3223, ECH 4403). .3

CIS 4912C **IPPD 1** (COT3100, CDA3101, C0P3530, and consent of instructor)...3

CIS 4913C **IPPD 2** (C1S4912C).. .3

EIN 4354 **Engineering Economy** (upper division classification in engineering).. .3

EIN 4321 **Industrial Energy Management** (PHY 2049, EIN 4354).. .3

EIN 4221 **Total Quality Management** (Junior/senior level classification in engineering; introductory course in statistics, or consent of the instructor). .3

ESI 4312 **Operations Research 1** (C++ Computer Programming, Matrix and Numerical Methods).. .3

ESI 4523 **Industrial Systems Simulation** (CGS 2425, STA 4321).. .3

ENV 4601 **Environmental Resources Management** (ENV 3040C). . 2
CGN 4101 **Civil Engineering Cost Analysis** (Junior or senior standing or consent of instructor).. 2
CCE 4204 **Construction Methods and Management** (Junior or senior standing or consent of instructor, CGN 4101). .3

5. Environmental/Biological Engineering

ABE 2062 **Biology for Engineers**.. 3
ABE 3212C **Natural Resources Conservation Engineering** (MAP 2302 or EGM 3311 and EG classification).. 4
EES 3000 **Environmental Science and Humanity**.. 3
EES 3008 **Energy and Environment**.. 3
EES 4021 **Modeling Environmental Systems Dynamics** (ENV 3040C and 4102 or equivalent).. 3
EES 4050 **Environmental Planning and Design**.. 3
EES 4102 **Wastewater Microbiology 1** (CHM 2046).. 2
EES 4103 **Applied Ecology 2**.. 2
EES 4200 **Environmental Chemistry of Carbon Compounds** (CHM 2046). . 2
EES 4201 **Water Chemistry** (CHM 2046).. 3
EES 4370 **Environmental Meteorology and Oceanography** (CHM 2046).. 3
EES 4401 **Public Health Engineering**...3
ENV 4101 **Elements of Atmospheric Pollution** (CHM 2046, PHY 2049)...3
CWR 4812 **Water Resources Engineering** (CWR 4202, CWR 4111). .3
CWR 4111 **Engineering Hydrology** (CWR 4202, EG classification only).. 3