

# College of Engineering & Computational Sciences

## B.S. Mechanical Engineering ~ Advising Flowchart ~ 2016-2017

(See back for legend and list of Mechanical & Adv. Engineering Electives)

### Freshman Year

PAGN1XX-2XX 0.5  
Phys. Ed.

LAIS100 4 FS  
Nat. & Hmn. Values

CHGN121 4 FS  
Prin. Chemistry I

CSM101 0.5 FS  
Fr. Seminar

Distributed 4 FSs  
Science Elective #

MATH111 4 FSs  
Calc. I  
Pre: Pre-calc

PAGN1XX-2XX 0.5  
Phys. Ed.

CHGN122/125 4 FSs  
Chemistry II  
Pre: CHGN121 (≥C-)

PHGN100 4.5 FSs  
Physics I  
Pre: MATH111  
Co: MATH112

MATH112 4 FSs  
Calc. II  
Pre: MATH111 (≥C)

EPIC151 3 FS  
Design I

### Sophomore Year

PAGN1XX-2XX 0.5  
Phys. Ed.

LAIS200 3 FS  
Human Systems  
Pre: LAIS100

CEEN241 3 FSs  
Statics  
Pre: PHGN100  
Co: MATH112

PHGN200 4.5 FSs  
Physics II  
Pre: PHGN100 (≥C-)  
Co: MATH213

MATH213 4 FSs  
Calc. III  
Pre: MATH112/113/122 (≥C)

MEGN200 3 FS  
Intro to Mechanical  
Engineering  
Pre: EPIC151

PAGN1XX-2XX 0.5  
Phys. Ed.

MTGN202 3 FS  
Eng. Mat. Systems  
Pre: CHGN122 or 125,  
MATH112, PHGN100

MEGN312 3 FS  
Intro to Solid Mechanics  
Pre: CEEN241 (≥C-)  
Pre/Co: MEGN200

EENG281 3 FS  
Intro. Circuits ‡  
Pre: PHGN200

MEGN361 3 FS  
Thermo. I  
Pre: MATH213 (≥C-)

MATH225 3 FSs  
Diff. Eqn.  
Pre: MATH112 (≥C)

MEGN201 3 s  
Field Session  
Pre: EENG281,  
MEGN200, MEGN312

### Junior Year

EBGN201 3 FSs  
Principles of  
Economics

EGGN250 1.5 FS  
MEL I  
Pre: PHGN200

MEGN351 3 FS  
Fluid Mechanics  
Pre: CEEN241 (≥C-)

MATH307 3 FS  
Intro to Scientific  
Computing  
Pre: MATH 213,225

MEGN315 3FS  
Dynamics  
Pre: CEEN241 (≥C-),  
MATH225 (≥C-)

MEGN424 3 FS  
CAE  
Pre: MEGN312 (≥C-)

H&SS 3 FSs  
mid-level\*

EGGN350 1.5 FS  
MEL II  
Pre: EGGN250,  
MEGN312  
Co: MEGN351

MEGN471 3 FS  
Heat Transfer  
Pre: MATH225,  
MEGN351 (≥C-),  
MEGN361 (≥C-)

EENG307 3 FS  
Feedback Cont.  
Pre: EENG281,  
MATH225

MEGN481 4 FS  
Machine Design  
Pre: MEGN424 (≥C-),  
MEGN315 (≥C-)

MEGN381 3 FS  
Manufacturing  
Processes  
Pre: MTGN202,  
MEGN201, MEGN312

### Senior Year

Free 3 FSs  
Elective

H&SS 3 FSs  
mid-level\*

EGGN450 1 FS  
MEL III  
Pre: EGGN350, MEGN351,  
MEGN312  
Co: EENG307

MECH 3 FS  
Elective

Advanced 3 FS  
ENG Sciences  
Elective

EGGN491 3 FS  
Senior Design I  
Pre: MEGN201,  
MEGN481

Free 3 FSs  
Elective

H&SS 3 FSs  
400-level\*

MECH 3 FS  
Elective

Free 3 FSs  
Elective

EGGN492 3 FS  
Senior Design II  
Pre: EGGN491

\* See 2016-17 Undergrad Bulletin for list of acceptable courses.

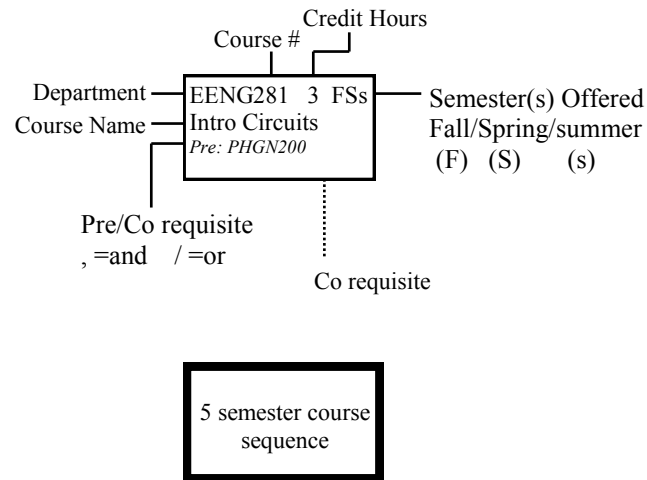
‡ PHGN215 can be substituted for specified prerequisite.

# CBEN110, GEGN101 may be taken for the Distributed Science Elective.

# Mechanical Electives

The list of approved Mechanical Engineering electives appears below. Students are required to take three of these courses and at least one must be from **Advanced Engineering Sciences**. In addition to these courses, any graduate course taught by a member of the Mechanical Engineering faculty will also be counted as a Mechanical Engineering Elective.

## Legend



### Advanced Engineering Sciences (must take at least 1)

MEGN412	Advanced Mechanics of Materials
MEGN416	Engineering Vibrations
MEGN461	Thermodynamics II
MEGN451	Fluid Mechanics II

### Mechanical Engineering Electives (must take at least 2; can also choose a second course from the Advanced Engineering Sciences list)

CEEN405	Numerical Methods for Engineers
CEEN406	Finite Element Methods for Engineers
EBGN321	Engineering Economics
EENG389	Fundamentals of Electrical Machinery
EENG417	Modern Control Design
EGGN401	Projects for People
MEGN330	Intro. to Biomechanical Engineering
MEGN430	Musculoskeletal Biomechanics
MEGN435	Modeling & Simulation of Human Movement
MEGN436	Computational Biomechanics
MEGN441	Intro. to Robotics
MEGN466	Intro. to Internal Combustion Engines
MEGN485	Manufacturing Optimization w/ Network Models
MEGN493	Engineering Design Optimization
MEGN498	Special Topics in Mechanical Engineering
MEGN5XX	Any MEGN500+ level course
MTGN311 w/ Lab	Structure of Materials
MTGN445 w/ Lab	Mechanical Behavior of Materials
MTGN450	Statistical Control of Materials Processes
MTGN463	Polymer Engineering
MTGN464 w/ Lab	Forging and Forming
MTGN475 w/ Lab	Metallurgy of Welding
NUGN520	Reactor Thermal Hydraulics
PHGN300	Modern Physics
PHGN350	Intermediate Mechanics
PHGN419	Principles of Solar Energy Systems

Flowchart based on the 16-17 Undergraduate Bulletin