FIU Mechanical Engineering Undergraduate Program
Flowchart of BSME Curriculum

Effective Fall 2018

Term

1
- MAC 2311 Calculus I
- EGS 1006 Intro to Engineering
- CHM 1045/1045L Chem I w/ Lab
- Art (SPC 2608)
- SLS 1501 Freshman Experience
- ENC 1101 Writing & Rhetoric I

Crsds. 17

2
- MAC 2312 Calculus II
- EML 2032 Programming for ME
- PHY 2048/2048L Physics I w/calc.& Lab
- EML 1533 Intro to 3D CAD for ME's
- ENC 1102 Writing & Rhetoric II

Crsds. 18

3
- MAC 2313 Multivariable Calc.
- EGN 3311 Statics
- PHY 2049/2049L Physics II w/calc.& Lab
- EGN 3365 Materials in Eng.
- Social Science Group 1

Crsds. 18

4
- MAP 2302 Diff. Equations
- EGN 3321 Dynamics
- EGN 3343 Thermo I
- EIN 3390 Manuf. Processes
- EEL 3110/EEL 3110L Circuit Analysis & Lab

Crsds. 15

5
- EGN 3311 Analysis of Eng. Systems
- EML 3126 Transport Phenom
- EMA 3702 Mech. & Mat. Sci
- EML 3036 Simulation Software
- EML 3301L Instrument Lab.

Crsds. 16

6
- EML 3222 System Dynamics
- EML 4140 Heat Transfer
- EML 3500 Mech. Design I
- EML 3702 Mech & Mat Lab or EML3126L Transp. Phenom Lab
- EGN 3613 Eng. Economy

Crsds. 16

7
- EML 4706 Design of Thermal & Fluid System
- EML 4551 Ethics Dsg Project Org. (GL Discipline Specific)
- EML 4501 Mech. Design II
- EML 4806 Model Ctrl of Robot or EML 3450 Energy System
- Eng. Elective

Crsds. 13

8
- EML 4905 Senior Project Design (GL Discipline Specific)
- Design Eng. Elective
- EML 4804 Intro, Mechatronics or EML4721 Intro Comp. ThermoFluids
- Eng. Elective
- Social Science Group 2 (EGS 1041 GL Found)

Crsds. 15

Total Crds. 128

Other requirements:
GPA>2.0:_______ FLENT/FLEX _______ GRW1/GRW2______ Summer (9crds)_____GL Foundations _______
Admission Requirements: Calculus I ready,
Pre-req: MAC 1105+ (MAC 1114+MAC 1140) or MAC 1147

If Design, Mechanics and Robotics area must take first course listed for each box, if Thermo-fluids area must take second course listed. Check for prerequisites for specific courses on back.
**Students are required to complete two Advanced Core Electives with one Lab and three Technical Electives, one of which must be approved Design Elective.**

### Design, Mechanics, Materials, Robotics and Manufacturing

#### Advanced Core Electives
- EML 4804 Intro to Mechatronics. Prereq: EML 3301L or EEL 3003 or EEL 3110 or EEL 3111L or EEL 3110L.
- EML 4806 Modeling and Control of Robots. Prereq: EGN 3321 and EML 2032.

#### Technical Electives Courses
- EAS 4200 Intro to Design and Analysis of Aerospace Structures. Prereq: EML 3036, MAP 2302 or EGM 3311, EMA 3702.
- EGM 4610 Introduction to Continuum Mechanics. Prereq: EMA 3702.
- EGM 4370 Intro. Meshfree and Alternative Methods in ME. Prereq: EML 3036. (MAP 2302 or EGM 3311), or instructor permission.
- EGN 3567 Industrial Materials and Engineering Design.
- EMA 3066 Polymer Science and Engineering. Prereq: EGN 3365.
- EMA 4121L Materials Laboratory. Prereq: EGN 3365.
- EMA 4223 Mechanical Metallurgy. Prereq: EGN 3365 and EMA 3702.
- EMA 5295 Principles of Composite Materials. Prereq: EGM 5615 or instructor permission.
- EMA 5935 Advanced Topics in Materials Engineering. Prereq: EGN 3343 and EGN 3365.
- EML 3031 Instrumentation. Prereq: EEL 3110L.
- EML 4220 Mechanical Vibrations. Prereq: EGN 3321, EMA 3702, and EML 2032.
- EML 4260 Dynamics of Machinery. Prereq: EML 3262.
- EML 4561 Introduction to Electronic Packaging. Prereq: EEL 3003 or EEL 3110, and EEL 3110L.
- EML 4804 Intro to Mechatronics. Prereq: EML 3301L or EEL 3003 or EEL 3110 or EEL 3111L or EEL 3110L.
- EML 4806 Modeling and Control of Robots. Prereq: EGN 3321 and EML 2032.
- EML 4840 Robot Design. Prereq: EML 4806 or permission of the instructor.

### Fluids/Thermal Sciences and Energy Systems

#### Advanced Core Electives
- EML 3126L Transport Phenomena Laboratory. Prereq: EML 3126.
- EML 4721 Intro to Computational Thermo Fluids. Prereq: EGN 3311. Coereq.: EML 4140.

#### Technical Electives Courses
- EGM 4350 Finite Element Analysis in Mechanical Design. Prereq.: EGM 3311 and EMA 3702. Coreq.: EML 4140.
- EGM 4370 Intro. Meshfree and Alternative Methods in ME. Prereq: EML 3036. (MAP 2302 or EGM 3311), or instructor permission.
- EML 4601 Principles of Refrigerating and Air Conditioning. Prereq: EML 3101 or instructor permission.
- EML 4603 Air Conditioning Design. Prereq: EML 4140 or instructor permission.
- EML 4608C Mechanical Systems in Environmental Control. Prereq: EGN 3343.
- EML 4702 Fluid Dynamics. Prereq: EML 3128.
- EML 4711 Gas Dynamics. Prereq: EML 3126 and EGN 3343.
- EML 4721 Intro to Computational Thermo Fluids. Prereq: EGN 3311. Coereq.: EML 4140.

### Important Information for MECHANICAL ENGINEERING Curriculum

- **Grade “C” or better required for all ME courses, see advisor for clarification.**
- **EGS 1006 Intro to Engineering is required if transferring with less than 30 credit hours; otherwise, Students must take an approved Technical/Engineering Elective.**
- **Humanities, Social Science, Art courses mentioned are recommended. For other University Core Curriculum (UCC) Courses, go to: [http://undergrad.fiu.edu/advising/pdfs/ucc-new.pdf](http://undergrad.fiu.edu/advising/pdfs/ucc-new.pdf)**
- **Gordon Rule with Writing (GRW) requirement**: To fulfill this requirement, students can select any two GRW designated courses (six credit hours) chosen from the University Core Curriculum (UCC) courses list.
- **Global Learning (GL) Requirement:**
  - Transfer students who do not meet UCC requirements or have less than 60 credit hours prior to entering FIU must take one Global Learning (GL) Foundation course and one Global Learning Discipline-Specific course.
  - Transfer students who have more than 60 credit hours with or without an “AA” prior to entering FIU will satisfy the Global Learning (GL) requirement by completing two Global Learning Discipline-Specific courses which are Senior Design Project courses (EML 4551 and EML 4905).