MECHANICAL ENGINEERING, ENGINEERING SCIENCE
ASSOCIATE OF SCIENCE: 404
Total Credits: 61
Catalog Edition: 2018-2019

Program Description

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate track listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any track in engineering science will lead to the award of the AS in engineering science.

This track will prepare students to transfer to a four-year university with a major in mechanical engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the mechanical engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering adviser. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

Program Outcomes

Upon completion of this program a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in mechanics and energy system.
- Analyze and design simple mechanical system using analytical method(s).
- Use appropriate computer application software in mechanical engineering.

Program Advising

Germantown
- **Dr. Charles Kung, 240-567-7799**
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For more information please visit:
www.montgomerycollege.edu/engineeringadvising

2018-2019
Program Advising Guide
An Academic Reference Tool for Students

MECHANICAL ENGINEERING, ENGINEERING SCIENCE
ASSOCIATE OF SCIENCE: 404

Suggested Course Sequence

A suggested course sequence for full-time students follows. All students should review this advising sheet and consult an advisor. Visit www.montgomerycollege.edu/engineering advising for more information.

First Semester

- CHEM 135 - General Chemistry for Engineers
  4 semester hours
  OR
- CHEM 132 - Principles of Chemistry II
  4 semester hours (NSLD)
- ENES 100 - Introduction to Engineering Design
  3 semester hours (NSND/GEEL)
- ENGL 102 - Critical Reading, Writing, and Research
  3 semester hours (ENGF)
- MATH 181 - Calculus I
  4 semester hours (MATF)

Second Semester

- ENES 102 - Statics
  3 semester hours
- MATH 182 - Calculus II
  4 semester hours
- PHYS 161 - General Physics I: Mechanics and Heat
  3 semester hours (NSND)
- Behavioral and social sciences distribution
  3 semester hours (BSSD) **
- Humanities distribution
  3 semester hours (HUMD)

Third Semester

- ENES 206 - MATLAB for Engineers
  1 semester hour
- ENES 221 - Dynamics
  3 semester hours
- *ENES 272 - Introduction to Computer Aided Design 2 semester hours*
- MATH 280 - Multivariable Calculus
  4 semester hours
- PHYS 262 - General Physics II: Electricity and Magnetism
  4 semester hours (NSLD)
- Behavioral and social sciences distribution
  3 semester hours (BSSD) **

Fourth Semester

- ENES 220 - Mechanics of Materials
  3 semester hours
- ENES 232 - Thermodynamics
  3 semester hours
- MATH 282 - Differential Equations
  3 semester hours
- PHYS 263 - General Physics III: Waves, Optics, and Modern Physics
  4 semester hours (NSLD)
- Arts distribution
  3 semester hours (ARTD)

Total Credit Hours: 63

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

Advising Notes

- Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
- The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-CHEM 132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
- The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
- The co-requisite for ENES 100 is MATH 165 or higher.
- The pre-requisite for MATH 181 is MATH 165 (Precalculus). Mathematics initial course placement will be determined by the Accuplacer Math Test, AP/IB credit, or transfer credits.
- ENES 206 (1) or ENES 240 (3) is equivalent to MATH 206 (1) at UMCP.
- ENME 272 (2) at UMCP for which MC has no equivalents. Must be completed after transfer or through MTAP.

MECHANICAL ENGINEERING A.S.: 404

Total Credits: 63
Catalog Edition 18-19

Name: **Date:**   **ID #:**

GENERAL EDUCATION: FOUNDATION COURSES	Course	Hours	Grade
English Foundation	EN 102/**ENGL 102**	3	
Math Foundation	MA 181/**MATH 181**	4	

GENERAL EDUCATION: DISTRIBUTION COURSES	Course	Hours	Grade
Arts Distribution (ARTD)			
Humanities Distribution (HUMD)			
Behavioral & Social Sciences Distribution (BSSD) **		3	
Behavioral & Social Sciences Distribution (BSSD) **		3	
Natural Sciences Distribution without Lab (NSND)	PH 161/**PHYS 161**	3	
Natural Sciences Distribution with Lab (NSLD)	PH 262/**PHYS 262**	4	
General Education Elective (GEEL)	ES 100/**ENES 100**	3	

PROGRAM REQUIREMENTS	Course	Hours	Grade
(only if needed for EN 102/ENGL102)	EN 101/**ENGL 101**(A)	(3)	
(only if needed for MA 181/MATH 181)	MA 180/**MATH 165**	(4)	
	PH 263/**PHYS 263**	4	
CH 135/**CHEM 135 or** CH 102/**CHEM 132**		4	
	ES 102/**ENES 102**	3	
	ES 220/**ENES 220**	3	
	ES 221/**ENES 221**	3	
	ES 232/**ENES 232**	3	
	ENES 206	1	
	ENES 272	2	
	MA 182/**MATH 182**	4	
	MA 280/**MATH 280**	4	
	MA 282/**MATH 282**	3	

Overall GPA of 2.0 is required to graduate

Has student completed the Global Perspectives requirement? ☐ Yes ☐ No

Global Perspectives Course:

Total Credits:

Engineering and Computer Science Advising Web Page

** *The two behavioral and social sciences courses MUST be in different disciplines*

Last Modified: July 2018

Advising Worksheet Contact: Anthony Solano

See an *advisor* to submit an *Application for Graduation* the semester BEFORE you intend to graduate.

This UNOFFICIAL document is for planning purposes ONLY and completion does not guarantee graduation.

Transfer Opportunities

Montgomery College has partnerships with multiple four-year institutions and the tools to help you transfer. To learn more please visit:
http://cms.montgomerycollege.edu/transfer/ or
http://artsys.usmd.edu/

Get Involved at MC!

Employers and Transfer Institutions are looking for experience outside the classroom.

Engineering Student Professional Groups
https://cms.montgomerycollege.edu/engorgs.aspx

MC Student Clubs and Organizations
http://cms.montgomerycollege.edu/edu/plain.aspx?id=2439

Related Careers

Some require a Bachelor's degree.
Energy Auditor, Security Management Specialist, Compliance Manager, Supply Chain Manager, Software Developer, Geospatial Information Scientist and Technologist

Career Services
http://www.montgomerycollege.edu/career

Career Coach
A valuable online search tool that will give you the opportunity to explore hundreds of potential careers or job possibilities in Maryland and the Washington D.C. metropolitan area.

Get started today on your road to a new future and give it a try. Visit the website listed below:
https://montgomerycollege.emsicareercoach.com

Notes:

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MAKE YOUR MOVE