GENERAL ENGINEERING AREA OF CONCENTRATION, ENGINEERING SCIENCE AS: 410
Total Credits: 63
Catalog Edition: 2019-2020

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 area of concentration listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website http://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 area of concentration in engineering science will lead to the award of the AS in engineering science.

This area of concentration will prepare students to transfer to a four-year university with a major in general engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below. 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 http://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 the areas they choose their elective coursework
- Make basic designs of systems in their area of choice using analytical and numerical methods
- Use appropriate computer application software in engineering.

Program Advisors

Germantown

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For more information, please visit https://www.montgomerycollege.edu/engineeringadvising

To view the Advising Worksheet, please visit https://www.montgomerycollege.edu/_documents/counseling-and-advising/advising-worksheets/current-catalog/410.pdf

2019-2020

Program Advising Guide
An Academic Reference Tool for Students

410

GENERAL ENGINEERING AREA OF CONCENTRATION, ENGINEERING SCIENCE
ASSOCIATE OF SCIENCE: 410

GENERAL ENGINEERING AREA OF CONCENTRATION, ENGINEERING SCIENCE AS: 410

Suggested Course Sequence

A suggested course sequence for full-time students follows. All students should review this advising guide and consult an advisor.

First Semester
- CHEM 131 - Principles of Chemistry I *4 semester hours* (NSLD)

- ENES 100 - Introduction to Engineering Design *3 semester hours* (NSND/GEEL)

- ENGL 101 - Introduction to College Writing *3 semester hours* *

- MATH 181 - Calculus I *4 semester hours* (MATF)

- Humanities distribution *3 semester hours (HUMD)*

Second Semester
- ENGL 102 - Critical Reading, Writing, and Research *3 semester hours* (ENGF)

- MATH 182 - Calculus II *4 semester hours*

- PHYS 161 - General Physics I: Mechanics and Heat *3 semester hours* (NSND)

- ENES/ENEE elective *3 semester hours*

- Behavioral and social sciences distribution *3 semester hours (BSSD) ***

Third Semester
- MATH 280 - Multivariable Calculus *4 semester hours*

- PHYS 262 - General Physics II: Electricity and Magnetism *4 semester hours* (NSLD)

- ENES/ENEE elective *3 semester hours*

- Behavioral and social sciences distribution *3 semester hours (BSSD) ***

Fourth Semester
- MATH 282 - Differential Equations *3 semester hours*

- PHYS 263 - General Physics III: Waves, Optics, and Modern Physics *4 semester hours* (NSLD) or elective

- Program electives *6 semester hours* †

- Arts distribution *3 semester hours (ARTD)*

Total Credit Hours: 63

* ENGL 101/ENGL 101A, if needed for ENGL 102, or elective.

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

† MATH 165 if needed for MATH 181 or any course from the following disciplines: DATA, ENEE, ENES, PHYS, CMSC, CHEM, BIOL, GEOL, MGMT. (Students are encouraged to speak with an engineering faculty advisor or their transfer institution when selecting program electives.)

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.

Transfer Opportunities

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

Get Involved at MC!

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

MC Student Clubs and Organizations: https://www.montgomerycollege.edu/life-at-mc/student-life/
Engineering Student Professional Groups: https://www.montgomerycollege.edu/academics/programs/engineering-science/resources.html

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
Montgomery College offers a range of services to students and alumni to support the career planning process. To learn more, please visit https://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. For more information, please visit https://montgomerycollege.emsicareercoach.com

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