

Questions from Prospective Students (with our answers/references/links in red)

Curriculum

- Am I allowed to take classes over the summer at other schools for credit at UMBC?
Yes, as long as you have approval ahead of time. Here is information about the policy on taking courses at other colleges and transferring them back to UMBC:
 - **Transfer of Credit Policy:** <https://www.umbc.edu/policies/pdfs/UMBC%20III-1.41.01%20Policy%20on%20the%20Awarding%20UG%20Transfer%20Credit.pdf>
- Are we automatically accepted into the school of engineering if we complete the required courses or are there additional steps to get accepted? **Yes, if you pass the Gateway Courses with the required grades, there is nothing else you need to do to be fully accepted into Mechanical Engineering.**
- Can you test out of gateway requirement courses if you have already taken this at your present university? **If you took equivalent courses at another accredited college or university, and official transfer those courses to UMBC, you would not need to test out or re-take them.**
- Is there a course flow chart? What courses are we taking? What projects do we work on? Do all students in Engineering take the same classes Freshman year? What classes pertaining to Mechanical Engineering do you think pair best together. (Ex. if it is best to take a specific math with Physics I) like the topics covered in each class can help you in the other class and vice versa.
 - **See the attached 4-year plan**

Lab/projects/research

- What resources are there for MechE students to build the projects? Can they use these resources outside of class as well?
- Are the facilities always open for students to study and experiment?
 - **When you are in courses that require you to work on projects, you have wide access to the spaces and equipment.**
 - **The Mechanical Engineering Department staff facilitates the ordering and purchasing parts and items that you will need for your class projects for lab classes**
- Will we be touring the labs in the ME department? **Not today, as even we faculty and staff are not allowed on campus to show them to you.**
- Do you have any of the hands on labs present for students to use? **Yes, several of them! Also, there are several student organizations/clubs who work on design and manufacturing projects and some of those organization have lab space.**
- How does the school support students with respect to their research (Logistics, Funds, etc)?
 - **Undergraduate Research:** <https://ur.umbc.edu/home/mymajor/mechanical-engineering/>

Study Abroad/Internships/Industry partnerships

- What study abroad opportunities are available for Mechanical Engineering students?
Here are just a couple of examples (below), but this is something UMBC is passionate about – Internationalization/Globalization – so Study Abroad is well supported, logistically, academically, and financially.
 - **Engineering Thermodynamics and Sustainable Energy, Costa Rica**
<https://goabroad.umbc.edu/index.cfm?FuseAction=Programs.ViewProgramAngular&id=40495>
 - **Exchange Program, Universidade Do Porto, Portugal:**
<https://goabroad.umbc.edu/index.cfm?FuseAction=Programs.ViewProgramAngular&id=24939>
- What internship, coop or experiential opportunities are there? What companies are you in partnership with?
Yes. Industry organizations/companies very often send us information about internships which we share with the students. And UMBC's Career Center is also very helpful and supportive of helping students find off-campus experiences to support their career goals!
 - **Internships:** <https://careers.umbc.edu/>

(continued)

Clubs

- What robotics type teams are available at UMBC?
 - <https://my3.my.umbc.edu/groups/retrieverrobotics>
- Is there a department club? Robotics Club?
 - Clubs/Student Organizations: <https://coeit.umbc.edu/student-organizations/>

General

- What are the most common mistakes Mechanical engineering students face during their time at UMBC?
 - Not getting connected with faculty and/or clubs right from the beginning. Join at least one Engineering club your first year! Go to your teacher's office hours, learn about their research by asking them questions, etc.
 - Or, some students join too many clubs! Don't over extend yourself! ME is a very rigorous program that will require hard work in each of your classes. So work to find a balance of involvement that will support your academic and career goals, but be sure your studies come first.

Scholarships

- Would it be possible to re apply for the Meyerhoff Scholarship next year? Unfortunately, no. That specific program is only for entering freshman. But here is a link to some other scholarships that might be helpful:
 - Scholarship Retriever: <https://scholarships.umbc.edu/retriever/>

How do I communicate with UMBC during the Pandemic?

- You can always e-mail me (baileyc@umbc.edu) to start.
- Or, you can also use the Help link on MyUMBC (log in required). <https://my.umbc.edu/help>. Scroll until you find a topic that seems close to what you might be asking – even if you don't pick the right topic, the question will be moved around to the right department. People at UMBC refer to this “help” system as the “RT Ticket” system, so if anybody suggests that you submit an RT ticket – this is what they mean. And we use this system all the time, not just during the campus closure due to the pandemic.

**UMBC Mechanical Engineering Major
Four-Year Plan**

credits	Fall Year 1	Prerequisites	ENME courses Typically Offered
3	* ENES 101 - Intro Engineering Science (B or better required)	MATH151 with a "C" completed, or concurrently enrolled	Fall, Spring
4	MATH 151 - Calculus I	MATH150 with a "C", or score of 5 or higher on placement exam	
4	* CHEM 101 - Chemistry I	MATH106, or 150, or 151, or score of 4 or 5 on Math placement	
3	ENGL 100 - English Composition	score of 3, 4, 5, 6, or 7 on LRC English placement exam	
3	GEP		
17	Total		
credits	Spring Year 1	Prerequisites	Typically Offered
3	* ENME 110 - Statics (B or better required)	MATH 151, and PHYS 121 (concurrent ok)	Fall, Spring, Summer
4	* MATH 152 - Calculus II (B or better required)	MATH 151	
4	PHYS 121 - Physics I	MATH151, completed with C, or concurrent	
4	CHEM 102 - Chemistry II	CHEM 101	
2	CHEM 102L - Chemistry Lab	CHEM102, completed or concurrent	
17	Total		

* **indicates a Gateway course** - must pass with the grade indicated, in order to become ME Major. Students are permitted to retake two of the gateway courses one time to earn the required grade.

	Fall Year 2	Prerequisites	Typically Offered
3	ENME 220 - Mechanics of Materials	ENME110 (B), MATH152 (B), PHYS121	Fall, Spring, Summer
4	MATH 251 - Multi Variable Calculus	MATH 142 or 152	
4	PHYS 122 - Physics II	MATH152, PHYS121	
4	STAT 355 - Prob and Stat for Engineers	MATH152, MATH225/251	
15	Total		
	Spring Year 2	Prerequisites	Typically Offered
3	ENME 217 - Engr. Thermodynamics	ENME110 (B), MATH152 (B), PHYS121	Fall, Spring
3	ENME 204 - Intro to Design w/CAD	ENME220, ENES101, ENGL100	Fall, Spring
3	ENME 221 - Dynamics	ENME110, MATH152, PHYS121	Fall, Spring
3	MATH 225 - Differential Equations	MATH 142 or MATH152	
3	PHIL251 Ethical Issues in Sci. & Eng. (AH GEP)		
15	Total		

Mechanical Engineering Repeat Policy

At UMBC, students may not register for a course more than two times. They are considered registered for a course if they are enrolled after the end of the schedule adjustment period. Students may petition the Office of Undergraduate Education for a third and final attempt of a course taken at UMBC or another institution. **However, the Department of Mechanical Engineering will not support petitions for a 3rd attempt in a required 100 and 200-level (lower level) course for the purpose of continuing in the major.**

	Fall Year 3	Prerequisites	Typically Offered
3	ENME 301 - Engineering Materials	ENME 220, PHYS 122, CHEM 102&102L	Fall, Spring
3	ENME 303 - Engineering Math	ENME220, MATH251, MATH225, ENME221	Fall, Spring
3	ENME 320 - Fluid Mechanics	ENME 220, MATH 251, ENME217, ENME221, MATH225	Fall, Spring
4	CMPE 306 - Introductory Circuit Theory	PHYS122, and MATH 225-can be taken concurrently	
3	GEP		
16	Total		
	Spring Year 3	Prerequisites	Typically Offered
3	ENME 304 - Machine Design	ENME 204	Fall, Spring
3	ENME 321 - Transfer Processes	ENME 320	Fall, Spring
3	ENME 332L - Solids Materials Lab	ENME301, ENGL100	Fall, Spring
3	ENME 360 - Vibrations	ENME221, ENME303	Spring, Summer
4	Foreign Language 201		
16	Total		

	Fall Year 4	Prerequisites	Typically Offered
3	ENME 403 - Automatic Controls	ENME360 and either CMPE 306 or ENEE 302	Fall, Summer
2	ENME 432L - Fluid/Energy Lab	ENME321	Fall, Spring
3	ENME 4XX - Tech/Design Elective		
3	S/DE - Science/Design Elective		
6	GEP		
17	Total		
	Spring Year 4	Prerequisites	Typically Offered
3	ENME 444 - Systems Design	All 300 level ENME courses	Fall, Spring
2	ENME 482L - Vibrations/Control Lab	ENME 403	Spring, Summer
3	ENME 4XX - Tech/Design Elective		
6	GEP		
14	Total		

127 Total Credit Hours Required

UMBC Undergraduate Degree Requirements

Minimum University Requirements for an Undergraduate Baccalaureate Degree

Minimum Academic Credits: Without exception, students must complete a minimum of 120 academic credits to receive a UMBC degree. Academic credits exclude institutional credit (i.e., physical activity and developmental level coursework).

Minimum Grade Point Average: Without exception, students must have a minimum cumulative UMBC grade point average (GPA) of 2.0 to receive a UMBC degree. The UMBC GPA excludes institutional credit (i.e., physical activity and developmental level coursework) and all academic coursework with an earned "P" grade.

Minimum Upper Level Credits: Without exception, at least 45 of the minimum 120 credits required for graduation must be in UMBC courses numbered at the 300-level or above or their equivalents.

Minimum Resident Credits: Without exception, students must complete at least 30 credits of course work at UMBC (referred to as resident credit) to receive a UMBC degree. Of the 30 resident credits, 15 must be upper-level (courses numbered at the 300-level or above).

Writing Intensive Course (WI): Without exception, students must complete one writing intensive course with a grade of "C" or better; a designated WI course may count for the major or a general education requirement, or it may be taken as an elective. The WI course must be completed at UMBC; transfer courses shall not be used to fulfill this requirement.

General Education Requirements

Students must complete all general education requirements with a grade of "C" or better.

Courses taken on a Pass/Fail basis shall not be applied toward general education requirements.

To fulfill the general education requirements, UMBC students will complete courses distributed across seven broad areas of academic inquiry:

ENGLISH COMPOSITION (ENGL 100 or ENGL 110): Students must complete one English composition course with a general education designation within the first 30 credit hours of enrollment at UMBC.

MATHEMATICS: Students must complete one mathematics or statistics course with a general education designation within the first 30 credit hours of enrollment at UMBC.

ARTS AND HUMANITIES: Students must complete three arts and humanities courses with a general education designation; courses must come from at least two different academic disciplines.

SOCIAL SCIENCES: Students must complete three social science courses with a general education designation; courses must come from at least two different academic disciplines.

SCIENCES: Students must complete two science courses and one laboratory course with a general education designation.

LANGUAGE: Students must complete a language sequence through the 201 level or demonstrated proficiency at that level.

CULTURE: B.A./B.F.A students must complete two culture courses with a general education designation; B.S. students must complete one culture course with a general education designation.

Sample Electives Topics

**Mechanics of Deformable Solids
Mechanical Design For Manufacturing
HVAC Design
Computer Aided Finite Element Based Design
Materials and Processes for MEMS
Biomechanics
Biomaterials
Satellite Design
Computational Fluid Dynamics
Heat Transfer in Biological Systems
Global Engineering
Energy Sources for the Future
Fundamentals and Applications of Plasma Physics
High-speed Aerodynamics**

Accelerated Bs/MS program:

- **Obtain a Master's degree early in academic career**
- **Complete MS in one additional year**
- **Conduct research**
- **Gain valuable hands on experience**
- **Emphases**
 - **Design, Manufacturing and Systems**
 - **Biomechanical Engineering**
 - **Mechanics and Materials Engineering**
 - **Thermal Fluids Energy Engineering**

Research Experience and Internships for Mechanical Engineers

- **Internships with Industry**
 - **Northrop Grumman, Black & Decker, Eaton Fluid Sciences, others**
 - **The Shriver Center at UMBC**
- **Undergraduate Research Experience in the Department**
 - **UMBC is a research intensive university, ME has 15 faculty, more than one million dollars in annual external funding in biomedical engineering with clinical applications, nanotechnology, renewable energy, kinetics and vibration, materials and mechanics, engineering education, thermal-fluids, etc.**

Advanced Placement (AP) Examinations

UMBC will award credit and/or placement based on the scores indicated below in the approved Advanced Placement (AP) examinations listed. To receive credit for AP exams, students must have an official Advanced Placement score report sent to the UMBC Office of Undergraduate Admissions.

Office of Undergraduate Admissions

UMBC

1000 Hilltop Circle

Baltimore, MD 21250

Students may request an official AP score report by writing to:

Advanced Placement Service

P.O. Box 6671

Princeton, NJ 08541-6671

*Please remember to include **UMBC's College Entrance Examination Board (CEEB) code number (5835)** in the request.*

Examination	Required Score	Credits	UMBC Course Equivalency
Art History	5, 4, 3	3	ART 216
Art Studio - Drawing	5, 4, 3	3	ART 214
Art Studio - 2D	5, 4, 3	3	ART lower level elective
Art Studio - 3D	5, 4, 3	3	ART lower level elective
Biology	4	8	BIOL 141 + BIOL lower level elective with Lab
	5	8	BIOL 141 + BIOL 142 +Lab
Chemistry	5, 4	4	CHEM 101
Chinese	5	7	CHIN 202 and CHIN 301
	4	4	CHIN 202
	3	4	CHIN 201
Computer Science A	5	3	CMSC 201
	4, 3	3	CMSC 104
Computer Science A	5, 4, 3	3	IS 125 (BTA majors) or IS 147 (IS majors)
Computer Science Principles	5,4,3	3	CMSC 100
Economics - Macro	5, 4	3	ECON 102
Economics - Micro	5, 4	3	ECON 101
English Language and Composition	5, 4	3	ENGL 100
English Literature and Composition	5, 4	6	ENGL 100 and ENGL 210
Environmental Science	5, 4	3	GES 120
French	5	7	FREN 202 and FREN 301
	4	4	FREN 202
	3	4	FREN 201
French Literature	5, 4	6	Determined by MLLI Department
	3	4	Determined by MLLI Department

German Language	5	7	GERM 202 and GERM 301
	4	4	GERM 202
	3	4	GERM 201
Government and Politics - American	5, 4, 3	3	POLI 100
Government and Politics - Comparative	5, 4, 3	3	POLI 260
History - European	4 or 5	3	HIST 110
History - World	4 or 5	3	HIST 200
History - United States	4 or 5	3	HIST 101
Human Geography	5, 4, 3	3	GES 102
Italian Language	5, 4	6	Meets 201 Language Proficiency
	3	4	Meets 201 Language Proficiency
Japanese Language	5	7	JPNS 202 and JPNS 301
	4	4	JPNS 202
	3	4	JPNS 201
Latin	5, 4, 3	3	LATN lower level elective
Math - Calculus AB	5, 4	4	MATH 151
	3	4	MATH 150
Math - Calculus BC	5, 4	8	MATH 151 and MATH 152
	3	4	MATH 151
Music - Theory	5, 4, 3	3	MUSC 101
Physics B	5, 4, 3	8	PHYS 111 and PHYS 112
Physics C - Mechanics	5, 4	4	PHYS 121
Physics C -Electricity & Magnetics	5, 4	4	PHYS 122 (no lab)**
Physics 1	5, 4	4	PHYS 111
Physics 2	5, 4	4	PHYS 112
Psychology	5, 4, 3	3	PSYC 100
Spanish Language	5	7	SPAN 202 , SPAN 301
	4	4	SPAN 202
	3	4	SPAN 201
Spanish Literature	5, 4	3	SPANISH 300 level elective
	3	4	SPAN 202
Statistics	5, 4	4	STAT 121



Undergraduate Advising – Mechanical Engineering

The faculty of Mechanical Engineering is dedicated to helping each student attain his or her professional goals. Towards this end, the department has established the following system of advising.

Academic Advising:

1. Freshmen and Sophomores. These lower division students who intend to or are admitted to study engineering will be advised by the COE&IT (College of Engineering and Information Technology) office of Advising directed by Ms. Bielawski. COE&IT advisers are available in the second floor of the ITE building (ITE203-206) throughout the academic year for advising students concerning the Mechanical Engineering curriculum. All students are required to seek formal advising before being eligible to register for an upcoming semester's course.

The Advising Session Students in the College of Engineering and Information Technology have daily access to advisors. In ITE 203–206 there are posted walk in hours during those time periods that do not relate to advance registration. In addition, students are always free to contact an advisor to set up an appointment.

The COE&IT advising staff along with the degree audit report available through myUMBC provide the main guidance on issues related to General Foundation Requirements (GFRs) or (GDPs).

2. Upper division students: Those who have completed all their 100 and 200 level Mathematics, Physics, Chemistry and Engineering courses are advised by a Mechanical Engineering faculty advisor. This faculty member will handle all advising concerning selection, scheduling, and permissions for courses. The advisor will review and discuss progress and options with the student at least once every semester during the advisement period preceding registration for the upcoming semester. Furthermore, the advisor will also discuss with the student his/her particular interests and refer them to other faculty who might be of assistance. The advisor is available by appointment to his/her advisees throughout the semester.

The Undergraduate Coordinator for the Mechanical Engineering Department is available by appointment to deal with extraordinary problems or situations. He/she is also available throughout the semester to deal with students' issues as they arise. Permissions to take required courses from other institutions are granted only by the Undergraduate Coordinator.

Faculty Availability: Every faculty member will maintain substantial office hours every week in which students are encouraged to seek help and counseling not only concerning the particular course a faculty member happens to be teaching, but also concerning other academic and professional concerns a student might have. The University maintains a counseling service (see the Undergraduate Catalogue) to which students are encouraged to turn concerning personal problems. Students are encouraged to see the Chairman to help resolve problems that could not be satisfactorily addressed by the student's faculty advisor or the Undergraduate Coordinator.

In summary, the faculty takes its responsibility to advise and help students very seriously and is enthusiastic about interacting with students. Faculty availability is a hallmark of UMBC.

COEIT Advisors

Computer Science and Engineering Advisors



Catherine Bielawski, Assistant Dean of Undergraduate Student Services

Email: bielawsk@umbc.edu

Phone: 410-455-3096

ITE 206



Anne Arey, Assistant Director & Advisor

Email: annearey@umbc.edu

Phone: 410-455-3096

ITE 203



Josh Abrams, Assistant Director & Advisor

Email: josh.abrams@umbc.edu

Phone: 410-455-3096

ITE 202



Emily Stephens, Assistant Director & Advisor

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Phone: 410-455-3096

ITE 205

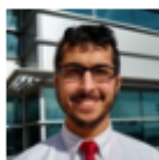


Krista Wallace, Transfer Success Advisor

Email: kriswall@umbc.edu

Phone: 410-455-3096

ITE 204



Ethan Ide, Academic Advisor

Email: eide1@umbc.edu

Phone: 410-455-3096

ITE 201 G

<https://umbc.academicworks.com/>

All UMBC students and applicants with a UMBC Campus ID may now submit a General Scholarship Application through [Scholarship Retriever](#) to be considered for Fall 2020 – Spring 2021 institutional scholarships. **Priority Deadline: June 1, 2020**

Welcome To **SCHOLARSHIP RETRIEVER**

UMBC is proud to offer a variety of scholarship opportunities to new and current degree-seeking students.

Our new Scholarship Retriever lists a variety of institutional, merit, financial need, and department scholarships.



Undergraduate, graduate, first time and transfer students are encouraged to apply.

Scholarships may cover tuition, student fees, textbooks, room and board.

HOW TO APPLY:



CREATE AN ACCOUNT

Sign in with your UMBC login



GENERAL APPLICATION

Complete the General Application



APPLY!

Notifications will be sent if you are eligible for additional scholarships

UMBC

AN HONORS UNIVERSITY IN MARYLAND



Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) in Mechanical Engineering at UMBC

The Mechanical Engineering Department at the University of Maryland Baltimore County (UMBC) was recently awarded a five-year S-STEM grant from the National Science Foundation (NSF). The award will support **scholarships and educational opportunities** for qualified undergraduate students and is entitled "Recruitment, Engagement, and Retention: Energizing and Supporting Students with Diverse Backgrounds in Mechanical Engineering".

KEY ELEMENTS

- ❖ Incorporate research experiences into education via seminars and access to research laboratories
- ❖ Provide academic and professional development experiences that identify employment opportunities and paths for graduate study
- ❖ Improve the transfer experience from local community colleges and promote involvement and success
- ❖ Support students with a leadership team of research and education faculty and student support specialists

S-STEM SCHOLAR ELIGIBILITY AND AWARD GUIDELINES

UMBC's Mechanical Engineering S-STEM program provides need and academic performance based scholarships to qualified undergraduate students. The objectives are to improve student retention and increase career prospects, with special emphasis on diversity. The scholarship is aimed at **graduating high school seniors, community college transfer students and UMBC students**. Scholarships will be awarded to as many as 20 students annually with an average amount of \$6000. Eligible expenses include tuition, fees, books, supplies, housing, and equipment. Scholarship renewals will be based on academic performance and participation in S-STEM program activities.

The S-STEM scholarship applicants must:

1. Be US citizen or permanent resident
2. Be accepted to or have the intention to enroll in Mechanical Engineering major at UMBC
3. Maintain full time student status
4. Have a minimum GPA of 2.75
5. Demonstrate financial need by the need-based Federal financial aid. All applicants are required to fill out the FAFSA form (<http://www.fafsa.ed.gov>)



HOW TO APPLY

Application materials can be downloaded from the S-STEM Program website at: me-stem.umbc.edu

The deadline to submit the application materials is **May 15th or Dec 15th**. Applicants will receive e-mail confirmation after receipt.

Submit your application package to:

Liang Zhu, Ph.D.

**Department of Mechanical Engineering
University of Maryland Baltimore County
1000 Hilltop Circle
Baltimore, MD21250**

Contact information

zliang@umbc.edu or 410-455-3332

UMBC: www.umbc.edu

ME: me.umbc.edu

ME S-STEM: me-stem.umbc.edu

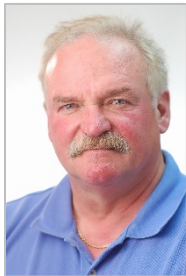


UMBC Mechanical Engineering Support Staff



Connie Bailey

Undergraduate Program Academic Support
Graduate Program Coordinator
Joined department in 2019



Howard Bihi

IT Support
Joined in 2008



Henry Mink

Engineering Technician
Machinist
Joined in 2011



Karen Roulette

Business Specialist
Purchasing for class projects and student organizations
Joined in 1998



Diane Zeenny Ghorayeb

Program Management Specialist
Purchasing for class projects
Departmental Administrative support
Joined in 2018