

New Student Guide

Fall 2021



UAB SCHOOL OF
ENGINEERING

The University of Alabama at Birmingham

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Who We Are

School of Engineering Leadership

Dean: Jeffrey W. Holmes, M.D., Ph.D.

Associate Dean for Research: Timothy M. Wick, PhD

Associate Dean for Academic Affairs and Graduate Programs: Gregg M. Janowski, PhD

Associate Dean for Undergraduate Programs: Zoe B. Dwyer, PhD

School of Engineering Overview

The School of Engineering provides professional education in engineering through the Departments of Biomedical Engineering; Civil, Construction, and Environmental Engineering; Electrical and Computer Engineering; Materials Science and Engineering; and Mechanical Engineering.

Undergraduate Curriculum

Each undergraduate curriculum is comprised of four components: the UAB Core Curriculum as specified for engineering majors; mathematics and basic science courses; a series of engineering courses intended to provide a breadth of technical education; and concentrated study in a particular engineering discipline. The curricula are designed to prepare the graduate to practice the profession of engineering and effectively participate as a member of society. Additionally, the School of Engineering participates in UABTeach.

Graduate Curriculum

At the graduate level, the School of Engineering offers programs of study leading to the Master of Science in Biomedical Engineering; the Master of Science in Civil Engineering; the Master of Science in Electrical and Computer Engineering; the Master of Science in Materials Engineering; and the Master of Science in Mechanical Engineering. A Master of Engineering degree is offered with concentrations in Advanced Safety Engineering and Management; Construction Engineering Management; Information Engineering Management; Structural Engineering; and Sustainable Smart Cities. A Master of Science in Engineering Management degree is offered with concentrations in Biomaterials and Tissue Engineering, Design and Commercialization, Environmental Engineering, Manufacturing Engineering, Power Systems Engineering, Software Engineering, and Vehicle and Robotics Engineering. The Doctor of Philosophy degree in Biomedical Engineering and the Doctor of Philosophy degree in Interdisciplinary Engineering are also offered. Joint Doctor of Philosophy degrees are offered in Materials/Metallurgical Engineering, Materials Science, and Civil Engineering. A shared Doctor of Philosophy degree in Computer Engineering is available.

Vision

To be nationally and internationally recognized as a top research-oriented School of Engineering: a first choice for a quality undergraduate and graduate education

Mission

To create and apply knowledge for the benefit of society, and to prepare engineering graduates to be immediately productive and able to adapt and to lead in a rapidly changing environment

Goals

- Provide an excellent educational experience for a community of highly capable students that reflect the diversity of our society

- Develop an education and research program that fosters the development of a community of scholars capable of defining and solving problems to benefit society
- Develop an internationally recognized research program focused in distinctive multi-disciplinary areas
- Develop extensive and mutually beneficial relationships that foster understanding, respect, and a sense of common responsibility
- Provide an environment where faculty and staff can achieve their full potential for the mutual benefit of the School and the individual

Engineering Majors

The School of Engineering offers the following Majors:

- | | |
|--------------------------|--------------------------|
| • Biomedical Engineering | • Engineering Design |
| • Civil Engineering | • Materials Engineering |
| • Electrical Engineering | • Mechanical Engineering |

Engineering Minors

The School of Engineering offers the following Minors:

- | | |
|---|---|
| • Applied Mechanics | • Environmental Engineering |
| • Biomedical Engineering | • Materials Engineering |
| • Civil Engineering | • Mechanical Engineering - Thermal Systems |
| • Electrical Engineering | • Mechanical Engineering - Mechanical Systems |
| • Engineering Science (not available to engineering majors) | • Software Engineering |
| • Engineering World Health | |

Who Engineering Students Are: Admission to the School of Engineering

First-Term Freshmen

In addition to satisfying the general requirements for admission to UAB listed in the [Undergraduate Catalog](#), individuals must meet the following minimum requirements:

- For admission to the School of Engineering, an ACT Math sub score of 22 (or SAT equivalent) and high school GPA of 3.00. All freshmen students who meet these requirements are admitted as a Pre-Biomedical, Pre-Civil, Pre-Electrical, Pre-Engineering Design, Pre-Materials, or Pre-Mechanical Engineering major based on their intended program. Students who are undecided on an engineering major are admitted as Pre-Engineering students.
- For direct admission as a Biomedical Engineering major, an ACT composite score of 28 (or SAT equivalent) and high school GPA of 3.00. All freshmen students who meet these requirements are admitted to Biomedical Engineering.

Students who do not meet the above criteria are admitted as an Undeclared - Interest in Engineering student in the Vulcan Materials University Academic Success Center. Placement into MA 105 Pre-Calculus Algebra or higher in the pre-calculus sequence will allow students to be admitted to the School of Engineering.

Transfer, Re-Admitted, & Post-baccalaureate Students, And Change of Major

To be admitted to the School of Engineering as *Pre-Civil, Pre-Electrical, Pre-Engineering Design, Pre-Materials, or Pre-Mechanical Engineering*, students must have a minimum cumulative GPA of 2.20 and, if applicable, a minimum institutional (UAB) GPA of 2.20 in addition to math placement in MA 105 Pre-Calculus Algebra or higher. Students who are undecided on an engineering major are admitted as Pre-Engineering students.

To be admitted to the School of Engineering as *Pre-Biomedical Engineering*, students must have a minimum cumulative GPA of 3.00 and, if applicable, a minimum institutional (UAB) GPA of 3.00 in addition to math placement in MA 105 Pre-Calculus Algebra or higher. Students who meet the math requirement with GPAs between 2.20 and 2.99 will be admitted as Pre-Engineering.

Students are admitted to their chosen department upon completion of the minimum requirements listed below.

Final Transcripts

Students who were enrolled in high school or another college/university when admitted to UAB (including dual enrollment), must provide a final and official transcript to the Office of Undergraduate Admissions no later than the first day of class. Official transcripts should be sent directly from the high school or college/university to:

UAB Undergraduate Admissions
Box 99
1720 2nd Ave S
Birmingham, AL 35294-2936

Keep in mind that admission is contingent pending receipt of all complete and OFFICIAL transcripts. Students who have not submitted final and official transcripts will not be able to register for future terms. UAB does not accept faxed or hand-delivered transcripts

Advancing to a Degree-Granting Engineering Major

Advancing to Civil, Electrical, Engineering Design, Materials, or Mechanical Engineering

In order to advance to an engineering major listed above, students must meet the following minimum requirements:

- Sophomore standing
- Completion (C or better) of *MA 125 Calculus I* and *MA 126 Calculus II*
- Completion (C or better) of two required science courses with appropriate labs
- Completion of *EGR 110 Introduction to Engineering I* and *EGR 111 Introduction to Engineering II* (or *EGR 200 Introduction to Engineering* for transfer students)
- *ME 102 Engineering Graphics*
- A minimum institutional (UAB) GPA of 2.20 (and a minimum cumulative [UAB + transfer] GPA of 2.20 if applicable)

Advancing to Biomedical Engineering

In order to advance to Biomedical Engineering, students must meet the following minimum requirements:

- Sophomore standing
- Completion (C or better) of *MA 125 Calculus I* and *MA 126 Calculus II*
- Completion (C or better) of two required science courses with appropriate labs
- Completion of *EGR 110 Introduction to Engineering I* and *EGR 111 Introduction to Engineering II* (or *EGR 200 Introduction to Engineering* for transfer students)
- *ME 102 Engineering Graphics*
- A minimum institutional (UAB) GPA of 3.00 (and a minimum cumulative [UAB + transfer] GPA of 3.00 if applicable)

The Academic Environment: Things that you need to know

The Transition to College: College and the College Classroom

Your instructors see you for only a short period of time every week. What you do in class is all they have to interpret your character and commitment, so think about what you do and how you do it.

Be advised -

All of you are the top high school students, the students who were college-bound, high-performing, and professionally-minded. However,

- This is a TRANSITION.
- College is a different culture.
- You have increased freedom and relatively new autonomy on how you spend your time.

Grade Point Average (GPA)

How to Calculate Your GPA

Your GPA is your Total Quality Points divided by your Total Credit Hours. *All courses are not “weighted” equally.* The “weight” of the course is determined by the number of credit hours

Each letter grade is assigned a numeric value (quality point) per credit hour:

<u>Letter Grade</u>	<u>Quality Point/ Credit Hour</u>
A (superior achievement)	= 4
B (above average)	= 3
C (average)	= 2
D (minimally adequate)	= 1
F (failing)	= 0

Note that grade notations of I, P, or W have no impact on GPA

EXAMPLE of First Term GPA Calculation

Quality Points earned per Course = (Course Credit Hours)*(Numeric Value of Earned Grade)

<u>CLASS</u>	<u>HOURS</u>	<u>GRADE</u>	<u>QUALITY POINTS</u>
EH 101 English Composition I	3	B	9
MA 125 Calculus I	4	C	8
CH 115 General Chemistry I	3	B	9
CH 116 General Chemistry I Lab	1	A	4
ME 102 Engineering Graphics	2	B	6
TOTAL	13		36

$$\begin{aligned}\text{UAB Term GPA} &= \text{Total Quality Points/Total Credit Hours} \\ &= 36/13 \\ &= 2.77\end{aligned}$$

in high school, with equal course weighting, this GPA would be 3.0

Types of GPAs

Institutional GPA: includes all UAB courses

Transfer GPA: includes all courses transferred to UAB

Overall GPA: includes all UAB and transfer coursework combined

Engineering GPA: includes all unforgiven attempts in all courses with engineering prefix required for the degree; NOT shown on transcript

Important GPA targets

- = 4.0 for term: *President's List* (institutional GPA)
- ≥ 3.60 for term: *Dean's List* (institutional GPA)
- ≥ 3.00 to *advance to BME* as a major (institutional and overall GPA)
- ≥ 3.00 to satisfy the requirements for most *scholarships* (institutional GPA)
- ≥ 2.20 to *advance to CE, EE, EGD, MSE, or ME* as a major (institutional and overall GPA)
- ≥ 2.0 to remain in *Good Academic Standing* (institutional GPA)
- ≤ 1.99 placed on *University Warning/Probation* (institutional GPA)

GPA Advice

It is impossible to raise a GPA significantly in one term, especially in the junior and senior years.

The quality points that you will earn in your freshman and sophomore years will set your GPA. In other words, how you begin college is a good predictor of how you will finish. Therefore, you should

- Set good study habits early
- Get an academic planner and include class times, study time, due dates, sleep – everything
- Know how to access course syllabi, materials, and notes and READ THEM
- ASK for help if needed!

Academic Resources

There are many resources available to students to promote academic success such as the following:

- Vulcan Materials Academic Success Center (VMASC) - click [here](#) for more information
 - Supplemental Instruction
 - Course Tutoring
 - Academic Coaching
- University Writing Center - click [here](#) for more information
- Math Learning Lab – click [here](#) for more information
- Engineering Tutor Center -click [here](#) for more information

School of Engineering Laptop Policy

Each UAB engineering student must have a laptop with the necessary software installed for each of their classes. Students have access to tech support for their engineering laptops through UAB TechConnect in Room 135 of the Hill Student Center.

TechConnect staff will be available between 9 a.m. and 5 p.m. Monday-Friday, no appointment necessary. Services provided will include installing required engineering software, as well as troubleshooting technical issues with the installation of the software.

Additionally, computers and software are available through [UAB TechConnect](#) at discounted prices. Recommended systems by School can be found [here](#).

Questions about computers or required software may be directed to techconnect@uab.edu or (205) 934-8333.

Note: Public-use computers in the Sterne Library are now able to connect to School of Engineering’s virtual computer lab. While these computers are available as a convenience, they do not exempt a student from the above laptop requirement.

Things to Know

- Windows-based laptops only. Apple products or computers that use a Linux operating system may not run required engineering software.
- Software will be installed on each student’s laptop, allowing remote access to School of Engineering resources through a virtual private network (VPN).
- IT support will be available through UAB TechConnect in Room 135 of the Hill Student Center.

Academic Advising

Academic Advising in the School of Engineering

- Advising is mandatory for all Engineering majors.
- Engineering students must have a Registration Access Code (RAC) to register, drop/add, and withdraw from courses.
- RACs change each term, so the RAC you use to register for fall classes will not allow you to register for spring or summer.
- You will meet with your advisor each term to plan for subsequent terms and receive your RAC



Your Advisor’s Role	Your Role as a Student
✓ Communicate: timely and transparently.	✓ Communicate: timely and transparently.
✓ Listen to your goals & aspirations.	✓ Reflect on your needs/goals/aspirations.
✓ Educate you on UAB.	✓ Observe academic and financial deadlines.
✓ Assist you in developing an academic plan.	✓ Plan ahead and be proactive.
✓ Advise you on course selection.	✓ Ask questions.
✓ Support you in your academic success.	✓ Advocate for yourself.

Preparing for an Academic Advising Appointment with your Advisor

Arrive prepared for your advising session:

- Know how you’re doing in the courses you are currently taking
- Review the 4-year program of study for your major
- Look through the courses being offered for the next term
- Develop a proposed schedule to review at your advising meeting

Engineering Advisors

<p><u>Pre-Engineering Majors: Last Name A-K</u></p> <p>Professor Sabrina Calhoun sruncal@uab.edu 205.934.8400 Hoehn Engineering Building, Suite 101</p>	
	<p><u>Pre-Engineering Majors: Last Names L-Z and all Post-Baccalaureate</u></p> <p>Dr. Zoe Dwyer zdwyer@uab.edu 205.934.8400 Hoehn Engineering Building, Suite 101</p>
<p><u>Biomedical Engineering Majors (not Pre-BME)</u></p> <p>Dr. Alan Eberhardt aeberhar@uab.edu 205.996.0165 Hoehn Engineering Building, Suite 361</p>	

Scheduling an Academic Advising Appointment

Use the “My Appointment” link on your homepage in BlazerNET to schedule an appointment with your assigned advisor



A Guide to College Courses

Course Numbering

Course numbers	Primarily for:
000 – 099	Developmental Courses*
100-199	Freshmen Level
200-299	Sophomore Level
300-399	Junior Level
400-499	Senior Level
500 and above	Graduate Level

*Developmental courses are counted in attempted hours only. Developmental courses may not apply toward completion of degree requirements and are not counted in the GPA calculation.

Course Load per Semester

Register for at least 12 hours to be considered a full-time student

Registration for more than 18 hours requires course overload approval—this is NOT a good option for first-term freshmen.

Courses and the Engineering Curriculum

Engineering Degree Requirements

All UAB engineering degrees require 128 specified hours as follows:

- 36 of the 128 hours are considered Core Curriculum courses
 - 6 hours in English Composition
 - 9 hours in the Arts and Humanities
 - 12 hours in Mathematics and Science (*MA 125 Calculus I, PH 221 General Physics I, PH 222 General Physics II*)
 - 9 hours in History and Social and Behavioral Sciences
- 92 hours specified by your major
 - Additional math and science courses
 - Engineering fundamental courses
 - Major specific courses

All hours are specified—there are no “free” or elective hours.

Please see the 4-year plans for each major on pages 22-28.

Applicable Math Courses

The first math courses applicable to any engineering degree are MA 125 Calculus I and subsequently MA 126 Calculus II.

Math Placement Assessment (MPA)

- Students who have no math credit or no math credit above the remedial level who wish to register for a math course at UAB must take the ALEKS Math Placement Assessment (MPA).
- Students must be admitted to the university before they can access the MPA.
- The MPA is provided at no cost to the student.
- Engineering majors who have no math credit, no math credit above the remedial level, or choose not take the Math Placement Assessment must register for MA 098 Basic Algebra.
- Students awaiting alternative credit score reports (i.e. AP, CLEP, AICE, DSST, etc.) should take the MPA and register for the highest math course in which they place. Once scores are submitted, students can adjust their registration accordingly. Alternative credit score reports should be sent to UAB as soon as possible.
- Keep in mind, if you do not complete the Math Placement Assessment, you will be placed in *MA 098 Basic Algebra* and registration for science courses and timely completion of any science-dependent major will be delayed/impacted.
- Students may take up to three (3) placement assessments (an initial assessment plus up to two additional attempts). However, to make each attempt worthwhile, it is important that you spend time working in your ALEKS Prep and Learning Module in between placement assessments so that you can improve your skills.

For more information click [here](#).

Scores required for placement into courses in the <u>Pre-Calculus Sequence</u>		
<u>Course</u>	<u>Description</u>	<u>ALEKS score</u>
MA 098	Basic Algebra	No score or 0-29
MA 102	Intermediate Algebra	30 - 45
MA 105	Pre-Calculus Algebra	46 - 60
MA 106	Pre-Calculus Trigonometry	61 - 67
MA 107	Calculus Algebra/Trigonometry	67 - 75
MA 125	Calculus I	76 - 100 or ACT math sub-score ≥ 29 or SAT math score ≥ 680

First-Year Experience (FYE) Courses

FYE are courses are part of the fundamental Engineering courses and are designed to help students transition from high school to college.

FYE Courses for Engineering Majors in the Honors College (HC)

- University Honors Program (UHP) scholar—9 credit hours UHP coursework
- Science & Technology Honors (STH) scholar—preregistered as planned by STH advisor
- Global Community Leadership Honors (GCLH) scholar
- Personalized Pathway scholar with placement into *MA 105 Pre-Calculus Algebra or higher* in the pre-calculus/calculus sequence (MPA Scores: 46 or greater):
 - *HC 111 Honors Seminar in Engineering* or *HC 120 Honors Seminar: Engineering Experience* (3 credit hours) and *ME 102 Engineering Graphics-Honors* (2 credit hours)

FYE Courses for Engineering Majors by Math Placement

- *MA 105 Pre-Calculus Algebra or higher* in the pre-calculus/calculus sequence (MPA Scores: 46 or greater)
 - Fall—*EGR 110 Introduction to Engineering I* (1 credit hour) and *ME 102 Engineering Graphics* (2 credit hours)
 - Spring—*EGR 111 Intro to Engineering II* (1 credit hour)
- *MA 098 Basic Algebra or MA 102 Intermediate Algebra* (MPA Scores: 0 to 45 or no score)
 - Fall - *CAS 112. Success in College* (1 credit hour) or
 - Fall - *UASC 101 Exploring UAB* (3 credit hours)



CH 115/116 General Chemistry I and Laboratory: Prerequisites, Registration, and Preparation

CH 115/116 General Chemistry I and Laboratory are required by all engineering majors at UAB.

Prerequisites:

The course prerequisites can be found in the class schedule. In short, we recommend that students be eligible to enroll in *MA 106 Precalculus Trigonometry* or higher in the pre-calculus/calculus sequence.

Preparation: prior to enrollment in CH 115, the student must be able to:

- Solve algebraic equations.
- Solve problems involving area, volume, speed, average, or percentage.
- List the basic metric units for mass, volume, and length.
- List the common prefixes used in the metric system with the appropriate numerical meaning.
- List the basic English units for weight, volume, and length.
- Convert between English measurements and metric measurements using dimensional analysis.
- List the SI units of measurement.
- Determine the number of significant figures in a measurement or in a calculated value.
- Write the numerical value in scientific notation. Use the appropriate rules for scientific notation to perform calculations.
- Use the appropriate rules for rounding-off numbers in all calculations.
- Know the formula for the determination of the density of an object from mass and volume data.
- Use the temperature conversion formulas to convert Fahrenheit temperature to Celsius, and Celsius temperature to Fahrenheit.
- Use the method of dimensional analysis along with appropriate conversion factors to express measurement given in one specific unit to another.
- Work basic stoichiometry problems that deal with chemical formulas and balanced chemical equations.

Registration: When enrolling in and taking CH 115:

- Enter the CRNs for *CH 115 General Chemistry I* and *CH 115R General Chemistry I Recitation* [problem solving for CH 115; must be taken the same term] in the same registration screen (in different boxes).
- Take *CH 116 General Chemistry I Lab* during the same semester as CH 115 if possible.
- Purchase the textbook early and study early if at all possible.
- Meet with the instructor regularly if you have any problems.
- Attend Supplemental Instruction (SI), which you will hear about on the first day. Don't wait until exam week or after a poor grade. These are FREE help sessions held weekly, led by former students who did well in the course and who sit in lecture with your

class. The schedule will be posted a week or two prior to the start of each term. Some students say it helps raise the grade by a letter grade. [Details here.](#)

- Attend all Recitation meetings and complete the practice problems given. Attendance is mandatory! Be careful which day/time you select, because you cannot get credit if the Recitation group you sign up for doesn't fit your schedule and you are unable to attend. Working these problems can help you prepare for the exams, and (as noted) your work counts in your lecture class grade. Not participating, or not attending the correct section, may make a letter grade difference in your lecture grade!

If you need to hire a tutor, check with the main Chemistry office (CHEM 201).

SAVE YOUR NOTES AND MATERIALS!

The final exam in General Chemistry II is comprehensive, covering BOTH SEMESTERS of General Chemistry.

The Core Curriculum

Sometimes called general education courses, the core curriculum is a selection of courses that promote six competencies, which build the foundation for attainment of the *Shared Vision for a UAB Graduate*:

- Ability to comprehend reading materials and to write
- Ability to make aesthetic judgments
- Ability to collect and evaluate information
- Ability to apply mathematical skills and quantitative reasoning
- Ability to reason and evaluate information within a context of the social and behavioral sciences
- Knowledge of contemporary and/or historical issues.

The Core Curriculum as Specified for Engineering Majors

- Six (6) hours in Written Composition (Core Area I)
- Nine (9) hours in the Arts and Humanities (Core Area II)
- Twelve (12) hours in Mathematics and Science (*MA 125 Calculus I, PH 221 General Physics I, PH 222 General Physics II*) (Core Area III)
- Nine (9) hours in History and Social and Behavioral Sciences (Core Area IV)

Core Area II: Humanities and Fine Arts and Core Area IV: Social and Behavioral Sciences as Specified for Engineering Majors

A total of 18 semester hours in Core Area II: Humanities and Fine Arts and Core Area IV: Social and Behavioral Sciences are required to fulfill the undergraduate program requirements in every engineering discipline. There are nine (9) credit hours required in each of these two areas. Please note: for Core Area IV, students cannot use more than 6 hours of History. Bolded courses are highly recommended.

In addition, as part of the common core curriculum, engineering majors must complete a six-semester-hour sequence in a discipline. To be considered a sequence, courses must have the same prefix and must be sequential if possible. (i.e., *HY 101 and HY 102 Western Civilization I and II*, *EH 221 and EH 222 British and Irish Literature I and II*, Any introductory foreign language I and II, *PY 101 and PY 212 Introduction to Psychology and Developmental Psychology*, *EC 210 and EC 211 Micro and Macroeconomics*)

CORE AREA II: Humanities and Fine Arts (9 semester hours required)

- Minimum of 3 hours in literature (prerequisite: EH 102 with a “C” or better) from the following list: EH 212 Form of Literature, EH 213 Ideas in Literature, EH 216 Introduction to Literature; EH 217 World Literature before 1660 (I); EH 218 World Literature since 1660 (II); EH 221 British and Irish Literature; EH 222 British and Irish Literature; EH 223 American Literature I (1620-1865); EH 224 American Literature II (1865-Present)
- 3 hours in fine arts from the following list: ARH 101 The Experience of Art, ARH 203 Survey History of Ancient & Medieval Art, ARH 204 Renaissance through Modern Art, ARH 206 Survey of Asian Art, ARS 280 Creativity & Imagination, MU 120 Music Appreciation, THR 100 Introduction to the Theatre, THR 102 Introduction to the Cinema, THR 105 Introduction to Dance, and THR 200 Plays on Film.
- 3 hours in humanities and/or fine arts (see list below)

Choose courses from the following:

AAS 200	Introduction to African American Studies	FR 202	Intermediate French II
AAS 201	Honors Introduction to African American Studies	GN 101	Introductory to German I
		GN 102	Introductory to German II
ARA 101	Introductory Arabic I	GN 201	Intermediate German I
ARA 102	Introductory Arabic II	GN 202	Intermediate German II
ARH 101	The Experience of Art	GN 204	Readings in German Literature
ARH 203	Survey History of Ancient & Medieval Art	ITL 101	Introductory Italian I
ARH 204	Renaissance through Modern Art	ITL 102	Introductory Italian II
ARH 206	Survey of Asian Art	JPA 101	Introductory Japanese I
ARS 280	Creativity & Imagination	JPA 102	Introductory Japanese II
CHI 101	Introductory Chinese I	MU 120	Music Appreciation
CHI 102	Introductory Chinese II	PHL 100	Introduction to Philosophy
CMST 101	Public Speaking	PHL 115	Contemporary Moral Issues
EH 212	Form of Literature	PHL 116	Bioethics
EH 213	Ideas in Literature	PHL 120	Practical Reasoning
EH 216	Introduction to Literature	PHL 125	Introduction to Ethics
EH 217	World Literature before 1660 (I)	PHL 203	Philosophy of Religion
EH 218	World Literature since 1660 (II)	POR 101	Introductory Portuguese I
EH 221	British and Irish Literature (I)	POR 102	Introductory Portuguese II
EH 222	British and Irish Literature (II)	SPA 101	Introductory Spanish I
EH 223	American Literature I (1620-1865) (I)	SPA 102	Introductory Spanish II
EH 224	American Literature II (1865-Pres) (II)	SPA 108	Introduction to Intensive Spanish
FLL 120	Foreign Cultures	SPA 201	Intermediate Spanish I
FLL 220	Foreign Literatures in English Translations	SPA 202	Intermediate Spanish II
FR 101	Introductory French I	THR 100	Introduction to the Theatre
FR 102	Introductory French II	THR 102	Introduction to the Cinema
FR 108	Introduction to Intensive French	THR 105	Introduction to Dance
FR 201	Intermediate French I	THR 200	Plays on Film

CORE AREA IV: History, Social, and Behavioral Sciences (9 semester hours required)

- Minimum of three (3) hours in history (maximum hours allowed in history is 6) from the following list: HY101 Western Civilization I, HY102 Western Civilization II, HY 104 World History to 1600 (I), HY 105 World History Since 1600 (II), HY 106 World History and Technology I, HY 107 World History and Technology II, HY120 The United States to 1877 (I), and HY121 The United States since 1877 (II)
- 6 hours in other disciplines in the social and behavioral sciences (see list below)

Choose courses from the following:

ANTH 101	Introductory Cultural Anthropology	HY 121	The United States since 1877 (II)
ANTH 106	Introductory Archaeology	ITS 101	Introduction to International Studies (not offered frequently)
ANTH 120	Language and Culture	PSC 101	Foundations of American Government
CMST 105	Introduction to Human Communication	PSC 102	Foundations of Comparative Politics
DCS 101	Media and Society	PSC 103	Foundations of International Relations
EC 210	Principle of Microeconomics	PSC 221	American State & Local Government
EC 211	Principles of Macroeconomics	PUH 202	Introduction to Global Health
FN 101	Money and Society	PY 101	Introduction to Psychology
GEO 121	World Regional Geography	PY 201	Honors Introduction to Psychology
HY 101	Western Civilization I	PY 212	Developmental Psychology
HY 102	Western Civilization II	SOC 100	Introduction to Sociology
HY 104	World History to 1600 (I)	SOC 245	Contemporary Social Problems
HY 105	World History Since 1600 (II)	WS 100	Introduction to Women's Studies
HY 106	World History and Technology I		
HY 107	World History and Technology II		
HY 120	The United States to 1877 (I)		

First-term Schedules Based on Math Placement

First-term courses

- Are based on your math placement
- Include a math and FYE course
- May include an English and/or science course

First-Term Courses Based on Math Placement in MA 098 Basic Algebra

Subject	Course Possibilities: MPA Scores 0 to 29	Hours
Math	MA 098 Basic Algebra	3
English	EH 101 English Composition (or EH 106/096L Introduction to Freshman Writing I or EH 108 English Composition I SLW)	3 (or 4 or 3)
FYE*	UASC 101 Exploring UAB	3
Core	Core II Fine Arts Course	3
Total Hours		12

First-Term Courses Based on Math Placement in MA 102 Intermediate Algebra

Subject	Course Possibilities: MPA Scores 30 to 45	Hours
Math	MA 102 Intermediate Algebra	3
English	EH 101 English Composition (or EH 106/096L Introduction to Freshman Writing I or EH 108 English Composition I SLW)	3 (or 4 or 3)
FYE*	UASC 101 Exploring UAB	3
Core	Core II Fine Arts Course	3
Total Hours		12

First-Term Courses Based on Math Placement in MA 105 Pre-Calculus Algebra

Subject	Course Possibilities: MPA Scores 46 to 60	Hours
Math	MA 105 Pre-Calculus Algebra	3
English	EH 101 English Composition (or EH 106/096L Introduction to Freshman Writing I or EH 108 English Composition I SLW)	3 (or 4 or 3)
FYE**	EGR 110 Introduction to Engineering I	1
Engineering	ME 102 Engineering Graphics	2
Core	Core II Fine Arts Course	3
Total Hours		12

First-Term Courses Based on Math Placement in MA 106 Pre-Calculus Trigonometry OR MA 107 Pre-Calculus Algebra and Trigonometry

Subject	Course Possibilities: MPA Scores 61 to 75	Hours
Math	MA 106 Pre-Calculus Trigonometry (MPA Scores 61 to 67) <u>OR</u> MA 107 Pre-Calculus Algebra and Trigonometry (MPA Scores 68 to 75)	3 OR 4
English	EH 101 English Composition (or EH 106/096L Introduction to Freshman Writing I or EH 108 English Composition I SLW)	3 (or 4 or 3)
FYE**	EGR 110 Introduction to Engineering I	1
Engineering	ME 102 Engineering Graphics	2
Science	CH 115/116 General Chemistry I and Laboratory	4
Total Hours		13/14

First-Term Courses Based on Math Placement in MA 125 Calculus

Subject	Course Possibilities: MPA Scores 76 to 100; ACT math sub-score \geq 29 or SAT math score \geq 680	Hours
Math	MA 125 Calculus I	4
English	EH 101 English Composition (or EH 106/096L Introduction to Freshman Writing I or EH 108 English Composition I SLW)	3 (or 4 or 3)
FYE**	EGR 110 Introduction to Engineering I	1
Engineering	ME 102 Engineering Graphics	2
Science	CH 115/116 General Chemistry I and Laboratory	4
Total Hours		14

Alternative Credit Opportunities

In some instances academic credit may be awarded for work done in a format other than a college course. Credits earned in this way are recorded on the transcript with a grade of P. Such credits may not be used in repeating a course and may not be awarded for work equivalent to a course that is a prerequisite to a course already taken for credit. No more than 45 semester hours of alternative credit may be applied toward a degree. Click [here](#) for more information.

Advanced Placement (AP)

AP Grade Reports for students that took exam(s) are sent in July to the student, the student's high school, and the college(s) the student selected on their exam answer sheet. If you did not send your scores to UAB, please notify The College Board and send your results to UAB. Click [here](#) for more information.

The amount of credit awarded and the examination score required are stated in the current policy. To determine which tests are eligible for UAB credit please see the Advanced Placement Credit Table. Click [here](#) to access the table.

International Baccalaureate Credit (IB)

To receive IB credit as a freshman or transfer student, use IB's Candidate Results Service to request a transcript be sent to UAB. Credit will be posted to your transcript after your IB scores have been evaluated and the drop/add date has passed. Click [here](#) for more information.

Academic credit may be awarded for qualifying scores on IB standard-level and higher-level examinations. To determine which tests are eligible for UAB credit please see the International Baccalaureate Credit Table. Click [here](#) to access the table.

College Level Examination Program (CLEP)

The CLEP General Examination must be taken before 15 semester hours of college work have been completed. The subject-area examinations are assigned credit as listed in the UAB CLEP Policy statement. For more information on CLEP testing schedules, fees and study guide information, please contact the UAB Testing Office: <http://www.uab.edu/testing> or (205) 934-3704. To determine which tests are eligible for UAB credit please see the College Level Examination Program Credit Table. [Click here](#) to access the table.

Extracurricular Courses

Band

- MUP 232 Marching Band (1 credit hour)
 - Usually requires additional music performance courses in private lessons

Choir

- MUP 110 Gospel Choir (1 credit hour)
- MUP 220 Concert Choir (1 credit hour)

ROTC

- MS 101 Military Leadership (2 credit hour) and MS 101L Leadership Lab (0 credit hour)
- AFS 101 Air Force Today (1 credit hour) and ASP 101L Leadership Lab (0 credit hour)

NOTE: One-and two-hour Band, Choir, and ROTC courses can require a significant time commitment.

Four-Year Programs of Study



BIOMEDICAL ENGINEERING (BME)

Program of Study — Catalog Year 2021-2022

		Fall Semester				Spring Semester			
	Terms Offered	Course	Course Title	Hrs.	Terms Offered	Course	Course Title	Hrs.	
Freshman	F, Sp, Su	CH 115/R/116	General Chemistry I/Lab	4	F, Sp, Su	BY 123/L	Introductory Biology I/Lab	4	
	F	EGR 110 ¹	Introduction to Engineering I	1	F, Sp, Su	CH 117/R/118	General Chemistry II/Lab	4	
	F, Sp, Su	EH 101	English Composition I	3	Sp	EGR 111 ¹	Introduction to Engineering II	1	
	F, Sp, Su	MA 125	Calculus I	4	F, Sp, Su	EH 102	English Composition II	3	
	F, Sp, Su	ME 102	Engineering Graphics	2	F, Sp, Su	MA 126	Calculus II	4	
	Total Credits				14	Total Credits:			
Sophomore	F, Sp, Su	BY 210	Genetics	3	Sp	BME 210	Engineering in Biology	3	
	F, Sp	EGR 265 ²	Math Tools for Engineering Problem Solving	4	F, Sp, Su	CE 210	Statics	3	
	F, Sp, Su	PH 221/R/L	General Physics I/Lab	4	F, Sp, Su	EE 312	Electrical Systems	3	
	F, Sp	MA 260	Introduction to Linear Algebra	3	F, Sp, Su	EGR 150	Computer Methods in Engineering	3	
	F, Sp, Su	MSE 280	Engineering Materials	3	F, Sp, Su	PH 222/R/L	General Physics II/Lab	4	
	Total Credits				17	Total Credits:			
Junior	F	BME 310	Biomaterials	3	Sp	BME 333	Biomechanics of Solids	3	
	F	BME 312	Biocomputing	3	Sp	BME 340	Bioimaging	3	
	F	BME 313	Bioinstrumentation	3	Sp	BME 350	Biological Transport Phenomena	3	
	F, Su	BY 409/L	Principles of Human Physiology/Lab	4	Sp	BME 423	Living Systems Analysis	3	
	F, Sp, Su	ME 215/R	Dynamics	3	F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3	
	Total Credits				16	Total Credits:			
Senior	F	BME 498	Capstone Design I	3	Sp	BME 499	Capstone Design II	3	
	F, Sp	BME 4XX	Biomedical Engineering Elective	3	F, Sp	BME 4XX	Biomedical Engineering Elective	3	
	F, Sp	BME 401 ⁵	Biomedical Engineering Seminar	1	F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3	
	F, Sp, Su	Elective ^{2,3}	MA/SCI/EGR/BME Elective	3	F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3	
	F, Sp, Su	Elective ³	MA/SCI/EGR/BME Elective	3	F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3	
	F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3					
Total Credits				16	Total Credits:				15

¹ Transfer students substitute EGR 200 (2hrs) for EGR 110/111

² May substitute MA 227 and MA 252 for EGR 265 and one MA/SCI/EGR/BME elective

³ Students using this curriculum as a pre-health professional program (pre-med, pre-dental or pre-optometry) may use CH 235, CH 237, or CH 460 for this elective

⁴ Please refer to the Core Curriculum as specified for engineering majors

⁵ May be taken any semester

CIVIL ENGINEERING (CE)

Program of Study — Catalog Year 2021-2022

		Fall Semester				Spring Semester			
	Terms Offered	Course	Course Title	Hrs.	Terms Offered	Course	Course Title	Hrs.	
Freshman	F, Sp, Su	CH 115/R/116	General Chemistry I and Lab	4	F, Sp, Su	PH 221/R/L	General Physics I and Lab	4	
	F	EGR 110 ¹	Introduction to Engineering I	1	F, Sp, Su	CH 117/R/118	General Chemistry II and Lab	4	
	F, Sp, Su	EH 101	English Composition I	3	Sp	EGR 111 ¹	Introduction to Engineering II	1	
	F, Sp, Su	MA 125	Calculus I	4	F, Sp, Su	EH 102	English Composition II	3	
	F, Sp, Su	ME 102	Engineering Graphics	2	F, Sp, Su	MA 126	Calculus II	4	
	Total Credits				14	Total Credits			
Sophomore	F, Sp, Su	CE 210	Statics	3	Sp	CE 200	Engineering Geology	2	
	F, Sp, Su	PH 222/R/L	General Physics II and Lab	4	F, Sp	CE 220	Mechanics of Solids	3	
	F, Sp	EGR 265 ²	Math Tools for Engineering Problem Solving	4	F, Sp, Su	CE 221	Mechanics of Solids Lab	1	
	F, Sp, Su	EGR 150	Computer Methods in Engineering	3	Sp	CE 236/L	Environmental Engineering and Lab	3	
	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	F, Sp, Su	ME 215/R	Dynamics	3	
	Total Credits				17	Total Credits			
Junior	F	CE 230/L	Plane Surveying and Lab	3	F, Sp	CE 222	Materials Lab	1	
	F	CE 332/L	Soils Engineering and Lab	4	Sp	CE 345	Transportation Engineering	3	
	F	CE 337	Hydraulics	3	Sp, Su	CE 360	Structural Analysis	3	
	F	CE 344	Civil Engineering Analysis	3	Sp	CE 395	Engineering Economics	3	
	F, Sp	ME 251	Introduction to Thermal Sciences	2	Sp	CE 430	Water Supply & Drainage Design	3	
	F	CE 371 ⁴	Professional Preparation	2	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	
Total Credits				17	Total Credits				16
Senior	F	CE 455	Reinforced Concrete Design	3	Sp	CE 426	Foundation Engineering	3	
	F	CE 497	Construction Engineering Management	3	Sp	CE 450	Structural Steel Design	3	
	F, Sp, Su	CE 4XX ²	Civil Engineering Elective (400 Level)	3	F, Sp	CE 499	Capstone Design Project	3	
	F, Sp, Su	CE 4XX	Civil Engineering Elective (400 Level)	3	F, Sp, Su	CE 4XX	Civil Engineering Elective (400 Level)	3	
	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	
	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3					Total Credits

1 Transfer students substitute EGR 200 (2hrs) for EGR 110/111

2 May substitute MA 227 and MA 252 for EGR 265 and one CE elective

3 Please refer to the Core Curriculum as specified for engineering majors

4 or BUS 350

ELECTRICAL ENGINEERING (EE)
Program of Study — Catalog Year 2021-2022

Fall Semester				Spring Semester			
Terms Offered	Course	Course Title	Hrs.	Terms Offered	Course	Course Title	Hrs.
Freshman	F, Sp, Su	CH 115/R/116	4	F, Sp	EE 210	Digital Logic	3
	F	EGR 110 ¹	1	Sp	EGR 111 ¹	Introduction to Engineering II	1
	F, Sp, Su	EH 101	3	F, Sp, Su	EH 102	English Composition II	3
	F, Sp, Su	MA 125	4	F, Sp, Su	MA 126	Calculus II	4
	F, Sp, Su	ME 102	2	F, Sp, Su	PH 221/R/L	General Physics I and Lab	4
			Total Credits: 14			Computer Methods in Engineering	3
					Total Credits: 18		
Sophomore	F, Sp	EE 314/R	3	F, Sp	EE 233	Engineering Programming Methods	3
	F, Sp	EGR 265 ²	4	F, Sp	EE 316/L	Electrical Networks	4
	F, Sp, Su	CE 210	3	F, Sp	EE 300	Engineering Problem Solving II	3
	F, Sp, Su	PH 222/R/L	4	F, Sp	ME 251	Introduction to Thermal Sciences	2
	F, Sp, Su	HFA/SBS ³	3	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3
			Total Credits: 17			Total Credits: 15	
Junior	F, Sp	EE 318	3	Sp	EE 254 ²	Applied Numerical Methods	3
	F, Sp	EE 333	3	F, Sp	EE 337/L	Introduction to Microprocessors	4
	F	EE 351/L	4	Sp	EE 361/L	Machinery I	4
	F	EE 485	3	F, Sp	EE 341	Electromagnetics	3
	F, Sp, Su	HFA/SBS ³	3	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3
			Total Credits: 16			Total Credits: 17	
Senior	F	EE 426	3	Sp	EE 421	Communication Systems	3
	F, Sp	EE 498	3	Sp	EE 431	Analog Integrated Electronics	4
	F, Sp, Su	EE 4XX	3	F, Sp	EE 499	Team Design Project II	3
	F, Sp, Su	EE 4XX	3	F, Sp, Su	EE 4XX	Electrical Engineering Elective	3
	F, Sp, Su	HFA/SBS ³	3	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3
			Total Credits: 15			Total Credits: 16	

1 Transfer students may substitute EGR 200 (2hrs) for EGR 110/111

2 May substitute MA 227 and MA 252 for EGR 265 EGR and EE 254

3 Please refer to the Core Curriculum as specified for engineering majors

ENGINEERING DESIGN (EGD)

Program of Study — Catalog Year 2020-2021

Fall Semester						Spring Semester					
Terms Offered	Course	Course Title	Hrs.	Terms Offered	Course	Course Title	Hrs.				
F	EGR 110 ¹	Introduction to Engineering I	1	Sp	EGR 111 ¹	Introduction to Engineering II	1				
F, Sp, Su	EH 101	English Composition I	3	F, Sp	EGR 117	Engr Design & Innovation I: Design Thinking	3				
F, Sp, Su	MA 125	Calculus I	4	F, Sp, Su	CH 117/R/118	General Chemistry II/Lab	4				
F, Sp, Su	CH 115/R/116	General Chemistry I/Lab	4	F, Sp, Su	MA 126	Calculus II	4				
F, Sp, Su	ME 102	Engineering Graphics	2	F, Sp, Su	PH 221/R/L	General Physics I and Lab	4				
Total Credits			14	Total Credits			16				
Freshman											
F, Sp, Su	CE 210	Statics	3	F, Sp, Su	ME 215/R	Dynamics	3				
F, Sp	EGR 265 ²	Math Tools for Engineering Problem Solving	4	F, Sp	CE 220	Mechanics of Solids	3				
F, Sp	EGR 217	Engr Design & Innovation II: Prototyping	3	F, Sp, Su	PH 222/R/L	General Physics II and Lab	4				
F, Sp, Su	EGR 150	Computer Methods in Engineering	3	F, Sp	MA 260	Intro to Linear Algebra	3				
F, Sp, Su	EH 102	English Composition II	3	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3				
Total Credits			16	Total Credits			16				
Sophomore											
F, Sp, Su	EE 312 or 314/R	Electrical Systems or Electrical Circuits	3	F, Sp, Su	ENGR ELECT ^{5,6}	BME/CE/EE/EGR/ME/MSE Course	3				
F, Sp, Su	MSE 280	Engineering Materials	3	F, Sp, Su	ENGR ELECT ^{5,6}	BME/CE/EE/EGR/ME/MSE Course	3				
F	EGR 317	Engr Design & Innovation III: Project Lab	3	F, Sp, Su	ELEC/CERT ⁴	Elective/Certificate Course	3				
F, Sp, Su	MA/SCI ²	Math/Science Elective	3	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3				
F, Sp, Su	ELEC/CERT ⁴	Elective/Certificate Course	3	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3				
F, Sp, Su	ENGR ELECT ^{5,6}	BME/CE/EE/EGR/ME/MSE Course	3								
Total Credits			18	Total Credits			15				
Junior											
F, Sp, Su	ENGR ELECT ^{5,6}	BME/CE/EE/EGR/ME/MSE Course	3	F, Sp, Su	ENGR ELECT ^{5,6}	BME/CE/EE/EGR/ME/MSE Course	3				
F, Sp, Su	ENGR ELECT ^{5,6}	BME/CE/EE/EGR/ME/MSE Course	3	F, Sp, Su	ELEC/CERT ⁴	Elective/Certificate Course	3				
F, Sp, Su	ELEC/CERT ⁴	Elective/Certificate Course	3	F, Sp, Su	ELEC/CERT ⁴	Elective/Certificate Course	3				
F	EGR 498	Capstone Design I	3	SP	EGR 499	Capstone Design II	3				
F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3				
F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3								
Total Credits			18	Total Credits			15				
Senior											

1 Transfer students substitute EGR 200 (2hrs) for EGR 110/111

2 May substitute MA 227 and MA 252 for EGR 265 and one approved science or mathematics elective

3 Please refer to the Core Curriculum as specified for Engineering majors

4 Could be used to complete an additional minor or certificate

5 The following courses do not fulfill this requirement: CE 200, CE 344, EE 254, EE 300, EE 318, EE 485, ME 364

6 Must include courses to complete the chosen engineering minor

MATERIALS ENGINEERING (MSE)

Program of Study — Catalog Year 2021-2022

		Fall Semester				Spring Semester			
	Terms Offered	Course	Course Title	Hrs.	Terms Offered	Course	Course Title	Hrs.	
Freshman	F, Sp, Su	CH 115/R/116	General Chemistry I/Lab	4	F, Sp, Su	CH 117/R/118	General Chemistry II/Lab	4	
	F	EGR 110 ¹	Introduction to Engineering I	1	Sp	EGR 111	Introduction to Engineering II	1	
	F, Sp, Su	EH 101	English Composition I	3	F, Sp, Su	EH 102	English Composition II	3	
	F, Sp, Su	MA 125	Calculus I	4	F, Sp, Su	MA 126	Calculus II	4	
	F, Sp, Su	ME 102	Engineering Graphics	2	F, Sp, Su	PH 221/R/L	General Physics I and Lab	4	
	Total Credits				14	Total Credits			
Sophomore	F, Sp, Su	CE 210	Statics	3	F, Sp	CE 220	Mechanics of Solids	3	
	F, Sp	EGR 265 ²	Math Tools for Engineering Problem Solving	4	F, Sp, Su	EE 312	Electrical Systems	3	
	F, Sp, Su	MSE 280	Engineering Materials	3	F, Sp	ME 251	Introduction to Thermal Sciences	2	
	F, Sp, Su	PH 222/R/L	General Physics II and Lab	4	F, Sp	MSE 281/L	Physical Materials I/Lab	4	
	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	F, Sp, Su	EGR 150	Computer Methods in Engineering	3	
					F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	
Total Credits				17	Total Credits				18
Junior	F	MSE 425 ⁵	Statistics and Quality	3	F, Sp, Su	MA/SCI ⁴	Math/Science Elective	3	
	F	MSE 380	Thermodynamics of Materials	3	Sp	MSE 382	Mechanical Behavior	3	
	F	MSE 381	Physical Materials II	3	Sp	MSE 470/L	Ceramic Materials/Lab	4	
	F	MSE 401	Materials Processing	3	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	
	F	MSE 465/L	Materials Characterization/Lab	4	Sp	MSE 464/L	Metals and Alloys/Lab	4	
	Total Credits				16	Total Credits			
Senior	F	MSE 413	Composite Materials	3	Sp	MSE 430/L	Polymeric Materials/Lab	3	
	F, Sp, Su	Elective ^{2,4}	SCI/MA/EGR Elective	3	Sp	MSE 499	Capstone Design Project II	3	
	F	MSE 498	Capstone Design Project I	3	F, Sp, Su	MSE 4XX	Materials Engineering Elective	3	
	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	F, Sp, Su	Elective ^{2,4}	SCI/MA/EGR Elective	3	
	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	F, Sp, Su	HFA/SBS ³	Area II/IV Core Curriculum	3	
	Total Credits				15	Total Credits			

1 Transfer students substitute EGR 200 (2 hrs) for EGR110/111

2 May substitute MA 227 and MA 252 for EGR 265 and one SCI/MA/EGR Elective

3 Please refer to the Core Curriculum as specified for Engineering Majors

4 Course must be approved by MSE Undergraduate Curriculum Coordinator

5 May substitute CE 344 for MSE 425

MECHANICAL ENGINEERING (ME)

Program of Study — Catalog Year 2021-2022

Fall Semester						Spring Semester					
Terms Offered	Course	Course Title	Hrs.	Terms Offered	Course	Course Title	Hrs.	Terms Offered	Course	Course Title	Hrs.
Freshman											
F	EGR 110 ¹	Introduction to Engineering I	1	Sp	EGR 111 ¹	Introduction to Engineering II	1				
F, Sp, Su	EH 101	English Composition I	3	F, Sp, Su	EGR 150	Computer Methods in Engineering	3				
F, Sp, Su	MA 125	Calculus I	4	F, Sp, Su	EH 102	English Composition II	3				
F, Sp, Su	CH 115/R/116	General Chemistry I/Lab	4	F, Sp, Su	MA 126	Calculus II	4				
F, Sp, Su	ME 102	Engineering Graphics	2	F, Sp, Su	PH 221/R/L	General Physics I and Lab	4				
				F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3				
			Total Credits				Total Credits				18
Sophomore											
F, Sp, Su	CE 210	Statics	3	F, Sp, Su	ME 215/R	Dynamics	3				
F, Sp	EGR 265 ²	Math Tools for Engineering Problem Solving	4	F, Sp	CE 220	Mechanics of Solids	3				
F, Su	ME 241/R	Thermodynamics I	3	F, Sp	CE 221	Mechanics of Solids Lab	1				
F, Sp, Su	PH 222/R/L	General Physics II and Lab	4	Sp	ME 242	Thermodynamics II	3				
F, Sp, Su	CH 117/R	General Chemistry II	3	F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3				
				F, Sp, Su	MA/SCI ^{2,3}	Math/Science Elective	3				
			Total Credits				Total Credits				17
Junior											
F	ME 321	Introduction to Fluid Mechanics	3	Sp	ME 322	Introduction to Heat Transfer	3				
F	ME 364	Linear Algebra and Numerical Methods	3	Sp	ME 360	Intro to Mechatronic Systems Engineering	3				
F	ME 370	Kinematics and Dynamics of Machinery	3	Sp	ME 361/L	Thermo-Fluids Systems and Lab	3				
F, Sp, Su	MSE 280	Engineering Materials	3	Sp	ME 371	Machine Design	3				
F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3	F, Sp, Su	EE 312	Electrical Systems	3				
			Total Credits				Total Credits				15
Senior											
F	MSE 401	Manufacturing Processes	3	Sp	ME 499	Capstone Design Project II	3				
F	ME 461/L	Mechanical Systems and Lab	3	Sp	CE 395	Engineering Economics	3				
F	ME 498	Capstone Design Project I	3	F, Sp	ME 4XX ⁵	Mechanical Engineering Elective (2)	3				
F, Sp	ME 4XX ⁵	Mechanical Engineering Elective (1)	3	F, Sp	ME 4XX ⁵	Mechanical Engineering Elective (3)	3				
F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3	F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3				
F, Sp, Su	HFA/SBS ⁴	Area II/IV Core Curriculum	3								
			Total Credits				Total Credits				18

1 Transfer students substitute EGR 200 (2hrs) for EGR 110/111

2 May substitute MA 227 and MA 252 for EGR 265 and one approved science or mathematics elective

3 Math/Science Elective chosen from approved list of courses

4 Please refer to the Core Curriculum as specified for Engineering majors

5 One ME elective in each of these three areas is required: thermal-fluids, mechanical systems, and computer-aided engineering

- (1) Mechanical systems electives include: ME 430, ME 431, ME 464, ME 470, ME 475, ME 477, ME 478 and ME 480
- (2) Thermal fluids electives include: ME 411, ME 421, ME 445, ME 447, ME 448, ME 449, ME 454, ME 455, ME 456
- (3) Electives with computer-aided engineering content include: ME 421, ME 464

A Glossary of Common Terms and Abbreviations

School/Department Abbreviations:

BME	Biomedical Engineering
BMEP	Pre-Biomedical Engineering
CE	Civil Engineering
CEP	Pre-Civil Engineering
EE	Electrical Engineering
EEP	Pre-Electrical Engineering
EGD	Engineering Design
EGR	Engineering
EGRP	Pre-Engineering
ME	Mechanical Engineering
MEP	Pre-Mechanical Engineering
MTE	Materials Engineering
MTEP	Pre-Materials Engineering

Catalog: Your contract with UAB when you enroll; courses, policies, and curricula can be found within UAB's Catalogs. <https://www.uab.edu/students/academics/catalogs>

Class Schedule: Exact dates, times, and location of courses. This is published each semester and is available through the UAB Students webpage.

<https://www.uab.edu/students/home/>

Co-requisite: Any course that must be completed no later than concurrent to a particular course.

Course Reference Number (CRN): The unique 5-digit course identification number that can be used to find a course in BlazerNET.

Drop/Add Period: Add/Drop deadlines are published in the [Academic Calendar](#). In the case of full-term course offerings, the last day to drop a class without paying full tuition is the eighth calendar day of the term; the last day to add a class is also the eighth calendar day of the term. For less than full-term course offerings, please refer to the Academic Calendar for your appropriate deadline. It is the student's responsibility to initiate add/drop procedures. Students may drop and add courses online after they have registered and until the drop/add deadline online using [BlazerNET](#).

Early Alert: Notification that a student is not performing as expected in a course. DO NOT IGNORE!

FERPA: Family Education Rights and Privacy Act of 1974; Private information will not be released to anyone, including parents, without written consent of the student except under strictly defined conditions

First Year Experience (FYE): Courses/experiences designed to help students transition from high school to college

Incomplete (I): is a temporary notation which is assigned at the discretion of the instructor, and only if the following three conditions are met. (1) The student, for nonacademic reasons beyond his or her control, is unable to complete course requirements. (2) The student is, according to the instructor's assessment, currently passing or has demonstrated the potential for passing the course. (3) The student has made

arrangements with the instructor, prior to the grade submission deadline, for completing the course requirements.

Pass (P): passing; Applicable only to a course taken on a pass/fail basis or grade notation for alternative credit such as AP or IB

Registration Access Code (RAC): Term specific code that is required to register, drop/add a course, or withdraw from a course

Registration Holds: Any outstanding item that must be addressed before you are allowed to register. These may include items such as immunizations, final transcript, orientation, student accounts, etc.

Office Hours: Times specifically set aside for an instructor to meet with students. These are typically walk-in hours. Some faculty may take appointments outside of these hours as well.

Placement: Course you are placed into based on high school GPA, ACT scores, or other factors. You may not take a course higher than your placement.

Prerequisite: Any course that must be completed BEFORE enrolling in a particular course.

Syllabus: Your contract with the instructor of a course. The syllabus typically contains instructor contact information and office hours, required textbook(s), expectations, grading policies, etc. It may also contain due dates for assignments, exam dates/times, or other pertinent information.

Withdraw Date: The deadline to withdraw from a course in order to receive a grade of "W."

Things to Look for When You Get to Campus

Get Involved in Engineering Student Organizations

- American Institute of Aeronautics and Astronautics (AIAA)
- American Foundry Society (AFS)
- American Society of Civil Engineers (ASCE - Student Chapter)
- American Society of Mechanical Engineers (ASME)
- ASHRAE
- Biomedical Engineering Society (BMES)
- Engineering Ambassadors
- Institute of Electrical and Electronics Engineers (IEEE)
- Institute for Transportation Engineers (ITE – Student Chapter)
- Material Advantage
- National Society of Black Engineers (NSBE)
- Society of Automotive Engineers (SAE)
- Society of Plastics Engineers (SPE)
- Society for the Advancement of Material and Process Engineering (SAMPE)
- Society of Women Engineers (SWE)

**GET
INVOLVED!**

Check out the Engineering Career Center



Engineering Career Center

"Train like an engineer" to be competitive for employment!

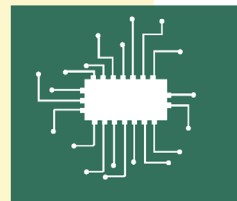
Get hands on experience with on-site and mock interviews, resume reviews, and any type of career help you might need!

Employers that work with and recruit from the UAB Engineering Career Center: Southern Company, Alabama Power, Altec, Hubbell Power, Southland Tube, Biohorizons Implant Systems, Southern Research, Honda, Hyundai, Tennessee Valley Authority, and much more!



When should I participate in a co-op or internship? After completing your first semester with UAB Engineering

What is a co-op? A program in which students alternate between academic study and full-time employment for 4-6 semesters



What is an internship? A program in which students work part-time/with a relatively flexible schedule for class with focus on job experience



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UAB SCHOOL OF
ENGINEERING
The University of Alabama at Birmingham