



General Engineering Curriculum Worksheet (2022-2023)

This worksheet outlines the required courses for this major. Students are expected to be familiar with general education and major-specific requirements for their intended major as outlined in the Clemson Undergraduate Catalog. Additionally, students must satisfy any Tri-County prerequisites for the courses below. To complete Bridge program requirements, students must earn 30 credits at Tri-County and a 2.5 GPA during their Bridge year (fall, spring, and optional summer, if needed). Students should consult the backside of this worksheet, the Undergraduate Catalog, and the Bridge Academic Guide for Clemson course equivalencies and alternative courses if students wish to enroll in other courses or if any of the following requirements have been met through dual enrollment or AP/IB credit. Advising worksheets are supplemental planning aids and are for informational purposes only.

SUGGESTED GENERAL ENGINEERING CORE COURSE SEQUENCE

Fall Semester

Arts & Hum. (Non-Lit.) Req.

ENG 101¹ or Social Science Req.

CHM 110

EGR 269

MAT 140

Total Hours: 16

Advising Notes:

Spring Semester

CHM 111 or EGR 275² or Lab Science³

EGR 270⁴

ENG 102 or **ENG 103**

MAT 141

PHY 221

Total Hours: 17 – 18

Advising Notes:

Additional Course Options

MAT 240

PHY 222

MAT 242⁵

SPC 200 and 205 (specific Engineering Majors)

¹ If a student places into ENG 103 and elects to take ENG 103, that student should wait to take ENG 103 until the Spring semester. For the Fall semester, students should take a Social Science or Non-Lit. course.

² Mechanical Engineering majors should take EGR 275. Civil Engineering Students should take EGR 210.

³ Students interested in Bioengineering, Biosystems Engineering, Chemical Engineering, Electrical Engineering, Environmental Engineering, and Materials Science and Engineering should take CHM 111. Industrial Engineering's lab science can include BIO 101, BIO 102, BIO 105, BIO 113, or CHM 111.

⁴ Students interested in Chemical Engineering will need to take CHE 1300 over the summer at Clemson. If not, you will be a year behind in the Chemical Engineering curriculum. If you are unsure of your engineering field, it is recommended that you take EGR 270. If you are confident in your choice of Chemical Engineering, take Arts & Humanities (Literature) or Social Sciences course.

⁵ MAT 242 (MATH 2080) is required for all Engineering majors except Industrial Engineering.



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Advising worksheets are supplemental planning aids. While every effort is made to ensure accuracy, the student's responsibility is to understand and meet degree requirements in the applicable Undergraduate Catalog. Students must complete requirements in bold and maintain a minimum GPR to transfer into an engineering degree program. Contact Clemson adviser **Deanna Milligan** (dmillig@clemson.edu) for additional information about this worksheet.

General Education Requirements	Tri-County Courses	Clemson Equivalent Courses
Communication (6 total credits): <i>Developing and expressing ideas.</i>		
A. English Composition: 3 – 6 credits	ENG 103 or ENG 101 + ENG 102	ENGL 1030 or ENGL 1999 + ENGL 1030
B. Oral Communication: 3 credits	<i>See individual engineering curriculum for a course that satisfies requirement. Civil engineering students could take SPC 205, and Computer/Electrical Engineering students could take SPC 200 or SPC 205.</i>	
Ways of Knowing (19 total credits): <i>Employing intellectual inquiry.</i>		
C. Arts & Hum. (Lit.): 3 credits	Select one course from the following: ENG 201, ENG 202, ENG 205, ENG 206, ENG 208, ENG 209, or ENG 220	Select one course from the following: ENGL 2140, ENGL 2130, ENGL 2120, or ENGL 2150
D. Arts & Hum. (Non-Lit.): 3 credits	<i>Select one course from the following:</i> ART 101, ART 107, HSS 205, MUS 105, PHI 101, PHI 105, PHI 110, REL 101, or THE 101	<i>Select one course from the following:</i> ART 2100, AAH 1010, STS 1010, MUSC 2100, PHIL 1010, PHIL 1020, PHIL 1030, REL 1010, REL 1020, or THEA 2100
E. Mathematics: 8 credits	MAT 140 MAT 141	MATH 1060 MATH 1080
F. Natural Science w/lab: 8 credits	CHM 110 PHY 221	CH 1010 PHYS 1220/1240
	<i>Students interested in Bioengineering, Biosystems Engineering, Chemical Engineering, Electrical Engineering, Environmental Engineering, and Materials Science and Engineering should take CHM 111. Industrial Engineering's lab science can include BIO 101, BIO 102, BIO 105, BIO 113, or CHM 111.</i>	
G. Social Sciences: 3 credits	ANT 101, ECO 210, ECO 211, GEO 102, HIS 101, HIS 102, HIS 122, HIS 201* , HIS 202, PSC 201* , PSC 220, PSY 201, SOC 101, OR SOC 205	ANTH 1010, ECON 2120, ECON 2110, GEOG 1030, HIST 1720, HIST 1730, HIST 1220, HIST 1010, HIST 1020, POSC 1010, POSC 1020, POSC 2010, SOC 2010, OR SOC 2020
	*HIS 201 or PSC 201 strongly recommended as they satisfy the REACH Act requirement for graduation.	
Global Challenges (6 total credits): <i>Exploring global, local, regional, national, international, virtual, or philosophical challenges.</i>		
H. Global Challenges: 6 credits	<i>Will complete at Clemson. Students will take a minimum of 6 credit hours, selected from two different fields (unless interdisciplinary), and at least three hours at the 3000-level or above.</i>	
Major Specific Requirements	Tri-County Courses	Clemson Equivalent Courses
I. Engineering: 5 credits	EGR 269 EGR 270 ⁴	ENGR 1020 ENGR 1410



General Engineering FAQs

What is General Engineering?

All students who desire to pursue an engineering program at Clemson are initially admitted to the College of Engineering, Computing, and Applied Sciences' general engineering program (GE). This program aims to provide students with an opportunity to explore various engineering fields while gaining a sound academic preparation for engineering study.

Clemson Undergraduate Engineering Programs

All first-year engineering students begin in general engineering before selecting one of the following disciplines:

- Bioengineering
- Biosystems engineering
- Chemical engineering
- Civil engineering
- Computer engineering
- Electrical engineering
- Environmental engineering
- Industrial engineering
- Materials science and engineering
- Mechanical engineering

What courses need to be completed before students switch to their intended engineering program?

Students who want to change from GE to a specific engineering program must complete the core GE courses below with a grade of C or better:

<i>TCTC Course</i>	<i>CU Course</i>
ENG 103 (or 101 + 102)	ENGL 1030
MAT 140 + 141*	MATH 1060 + 1080*
CHM 110	CH 1010
PHYS 221	PHYS 1220
EGR 269	ENGR 1020
EGR 270	ENGR 1410

Chemical engineering students will need to take CHE 1300 at Clemson during the Summer session after their Bridge year or be one year behind in their required curriculum. CHE 1300 is NOT offered in the Fall semester.

*MATH 1080 is a required course in all the engineering curricula but is only needed to be completed before transferring into industrial engineering.

Are there any GPA requirements to switch to an engineering program?

A minimum 2.5 GPA is required for most engineering programs. For mechanical engineering or civil engineering, students need a 2.6 GPA. To change to bioengineering, students need a 3.0 GPA. Students who do not meet the GPA requirements at the end of their Bridge year can enter Clemson in the general engineering program with a 2.5 GPA.

What if a student is not taking MAT 140 in the Fall of their Bridge year? How can the student catch up?

If a student is not ready to begin calculus (MAT 140) at Tri-County in the Fall, the student is strongly encouraged to complete additional math courses over the Summer to catch up. Preferably, this would be done before enrolling at Tri-County so the student can start the calculus series in the Fall and stay on track with the GE cohort. Suppose the student cannot begin math courses before starting the Bridge program. In that case, they are encouraged to take the additional coursework during the Summer session between the first year (Bridge) and sophomore year. Not completing calculus II before the sophomore year will delay progress in the engineering program and will most likely delay graduation by one or two semesters, depending on the choice of engineering program.

Are there any suggestions for course sequences?

It is highly recommended that the student complete as many of the recommended GE courses as possible before beginning their sophomore year at Clemson. Students who plan to pursue mechanical engineering should complete EGR 275 at Tri-County. Before their sophomore year, students who plan to pursue bioengineering should take BIO 101 or BIO 113 and CHM 111. Students who plan to pursue civil engineering should take ENGR 2100 and, if possible, GEOL 1010 and 1030 at Clemson between their first year and sophomore year. It is also suggested that students complete both MAT 140 and MAT 141 at a technical college before bridging or wait until they get to Clemson to take MATH 1060 and 1080. Students may struggle in MATH 1080 if they complete only MAT 140 at a technical college.

What are the LIFE Scholarship Enhancement requirements?

To receive the LIFE Scholarship Enhancement, recipients must start their sophomore year with a minimum of 30 earned credit hours, including 14 earned credit hours from approved math and science courses, and must be enrolled in an approved STEM major. Credits earned from AP/IB, dual enrollment, and the first (Bridge) year will be used to calculate eligibility for the LIFE Scholarship Enhancement. All 10 of Clemson's engineering majors are considered STEM majors, but general engineering is not.

Could the LIFE Scholarship Enhancement be affected if students are not out of GE before their sophomore year?

Students who remain in GE after being admitted to Clemson will not receive the LIFE Scholarship Enhancement for their sophomore year. Students who switch out of GE and maintain eligibility for the LIFE Scholarship may be eligible to get the LIFE Scholarship Enhancement for their junior and senior years at Clemson.