

Advising Information for Future Engineering Majors

from Dr. James Carr (SM 290, carrj@tcc.fl.edu)

First, your math classes are more than a speed bump on the way to a good job; you must be able to apply those math skills in courses taken several years later. Just cramming for tests is a bad plan, and a C is rarely enough. **Second**, check the admission requirements for the university you plan to attend. You won't get into the UF engineering school if you only meet the FAMU-FSU requirements, but FAMU and FSU have requirements that Florida does not. **Earn an AA** before transferring to any state university in Florida to avoid extra gen-ed courses. Finally, **join the TCC Engineering Club** to network with other students and our alumni at FAMU-FSU.

Future engineers need to understand the following:

1. You need to know the “core” science material from algebra, trig, calculus, chemistry, and physics to pass your engineering classes. Some programs require that all students pass a test on calculus (both 2311 and 2312) and physics (2048) at the start of their junior year. These basic skills are also tested by the Fundamentals of Engineering exam you must pass to begin work as an “engineer in training”.
2. All engineering schools require a high level of proficiency in math and science, but each one enforces it differently. **FAMU-FSU** gives you a total of 5 attempts to earn at least a “C” in four core courses: MAC2311, MAC2312, CHM1045, and either PHY2048 or (for chemical engineers) CHM1046. They ignore withdrawals and 1 repeat of a “D” or “F”, but they will never admit someone with more than two failures in these 4 classes. **Florida** now has a competitive admission process that ranks students by GPA while requiring a 2.5 average in its 8 core courses with at most 2 tries (counting withdrawals) to get a C in each course. Some UF majors require a minimum grade of B in the math and physics core courses.
3. The standard schedule is to take CHM1045 with pre-calc (and, if needed, CHM1046 with trig or calc I) before taking PHY2048. You should not take calculus and physics at the same time unless you earned A or B grades in trig (and pre-calc) on your first attempt. Your schedule must include time for 10+ hours per week of study just for physics and lab. Schedule a similar amount of time for calculus, and remember that calc II is harder than calc I.
4. Although the minimum number of core science courses required for admission can vary from as few as 4 (at FAMU-FSU) to 6 (at UF), you will need about 70 hours of engineering courses in addition to the full set of about 8 core courses before you can graduate. The best plan is to transfer with all physics and calculus classes completed so you can focus on engineering. Plan for more than just the minimum 60-hour requirement for the AA.
5. Some majors require specific social science courses. For example, chemical engineers at FSU and ISE majors at Florida need to take ECO2023, and all FSU students must take a multi-cultural gen-ed course (social science or humanities) sometime before graduation.

These notes are a general overview; discuss the details with your advisor.

Program Planning Suggestions for Engineering

Future engineers should have a detailed plan that leads to an AA degree after the “basic” math and science classes have been completed. No single schedule can do this for every student because requirements vary between sub-fields of engineering, but the following generic plan will give you an idea of what to include and what courses to group together in a semester. You may need to stretch this out because of your work schedule or to fit in the other classes you need.

Discuss your plan with your advisor!

Prerequisites	MAC1105	REA0002 and ENC0020
----------------------	---------	---------------------

Semester	Math	Science classes		Liberal Arts classes		Hours
1	MAC2140	CHM1045+L	<i>computer [1]</i>	ENC1101	History 1	13+
2	MAC2114	Elective [2,3]		ENC1102	History 2	14+
x	MAC2311			HUM2210 [4]		8
3	MAC2312	PHY2048+L			HSC1100	13
4	MAC2313	PHY2049+L	<i>see notes [1,6,7]</i>		Soc.Sci. [5]	12+
x	MAP2302		<i>see notes [1,6,7]</i>	HUM2230 [4]	POS1041 [5]	9+

Notes:

[1] There is a computer-literacy exam you can take at any time. All students going to UF need C++, and Electrical or Computer majors at FAMU-FSU apparently need COP2220 and either COP2221 (C++) or COP2800 (Java).

[2] Chemical engineers and students going to UF should take CHM1046 (*see note 3*) or the other required extra science at this time. FAMU-FSU civil engineers need GLY1030 or BSC2010 or GLY2010. (*Also see note 6.*)

[3] Students who are required to take four physical science classes (CHM1045+1046 and PHY2048+2049) can request a waiver of the gen-ed science distribution requirement at the Success Center after passing all four.

[4] There are alternatives to the standard humanities sequence that meet the FSU multi-cultural requirement. If you take one of those to meet the multi-cultural requirement, take POS1041 for social science (*but also see note 5*).

[5] Some majors require ECO2023. Students going to FAMU-FSU need an extra humanities or social science class (for a total of 18 hours), usually a multi-cultural course at FSU or the AMH2091 class required at FAMU.

[6] Civil and Industrial majors at FAMU-FSU can take EGS1111C and ETD1320; these 6 credits transfer as the required 2-credit course EGN2123. Civil majors at FAMU-FSU can also take ETD2350 (Advanced CAD); this 3-credit class transfers as the 1-credit course CGN2327L required for that major.

[7] Civil, Industrial, Chemical, and Electrical majors at FAMU-FSU could take EGS2311 and EGS2312. Together these 6 credits transfer as the required 4-credit Engineering Mechanics course EGM3512.