

Mathematics courses. Pre-engineering students must begin math courses immediately upon entering Jefferson and should take a math course every semester until they have completed the calculus sequence.

Recommended **preparatory** mathematics courses (for those not ready for Calculus) -- *Intermediate Algebra (MT 120); College Algebra (MT 150)*.

Recommended **preparatory** mathematics courses for those who have not had any Trigonometry -- *Trigonometry (MT 155)*

Essential Mathematics courses:

- Calculus I (MT 175 / MA 113)*
- Calculus II (MT 185 / MA 114)*
- Calculus III (MT 275 / MA 213)*

Recommended **additional** mathematics courses for those who wish to complete as much math as possible at Jefferson -- *Statistical Method (ST 291 / STA 291); Calculus IV/Differential Equations (MA 213/MT 285)*.

Science courses. Pre-engineering students should begin their science courses in their first or second semester, or as soon as they have completed college algebra if they need preparatory math classes.

Recommended **preparatory** science course (for those who need preparatory math and who have never taken physics or chemistry before) -- *Applied Physics (PH 171)*.

Essential Science courses:

- General College Chemistry I (CHE 105)*
- General Chemistry Lab I (CHM 105)*
- General University Physics I (PHY 231)*
- General University Physics II (PHY 232)*
- General University Physics Lab I (PHY 241)*

Recommended **additional** science courses -- *General University Physics Lab II (PHY 242 -- strongly recommended); General College Chemistry II (CHE 107); General Chemistry Lab II (CHM 107); Organic Chemistry & Labs (CHE 230 – 233)*, for students who intend to major in Chemical Engineering.

General education courses.

Pre-engineering students should *never* “get the basics out of the way first”. Students who take these courses first without taking math and science will find that after a couple of semesters it will be impossible to build a schedule of purely math and science courses. Pre-engineering students should take some general education courses each semester, along with their math and science courses.

Essential General Education courses:

- Introduction to College (GE 100)*
- Writing I (ENG 101)*
- Writing II (ENG 102)*
- Basic Public Speaking (COM 181)*
- Social Interaction Course
- 2nd Social Interaction Course
- 3rd Social Interaction Course
- Heritage (History) Course
- Humanities (Art, Literature, Religion, Music, Philosophy, etc.) Course

Social Interaction courses must cover at least two disciplines -- you may not take all of one type of course, such as only Sociology classes. Recommended Social Interaction courses include ECO 201, ECO 202, and any courses that qualify as Cultural Studies courses according to the KCTCS catalog. Recommended Heritage & Humanities courses include any literature survey course and any courses that qualify as Cultural Studies courses according to the KCTCS catalog. All students are required to have at least one Cultural Studies course as part of their degree.

Recommended **additional** general education courses -- any Foreign Language course.

The Pre-Engineering Curriculum consists of courses needed by engineering majors at Jefferson, regardless of the specific field of engineering (electrical, mechanical, etc.) they plan to study. The curriculum is designed for students who wish to transfer to the University of Louisville's Speed Scientific School or to the University of Kentucky's College of Engineering to pursue an engineering degree. The curriculum also meets the needs of engineering majors wishing to transfer to many other engineering schools. Students who complete the Pre-Engineering curriculum with at least 60 credit hours will graduate from Jefferson with an Associate in Science degree, and will be ready to enter engineering school. Completion of the degree statistically increases a student's chances of success after transferring and *all Pre-Engineering students are strongly advised to complete the Associate of Science degree*. All essential courses and most recommended additional courses in the Pre-Engineering curriculum are accepted in transfer at Speed and at UK with little trouble so long as a student completes his or her Associate in Science degree.

Technology courses. The only technology course pre-engineering students are required to take is computer literacy. However, a variety of recommended technical courses are available.

Essential Technology courses:

- Introduction to Computers (CIS 100)*

Recommended **additional** technology courses -- Any Blueprint Reading course; *Program Design & Development (CIS 120); Introduction to Computer-Aided Design (CAD 100)*; Programming Language course (recommended languages include VisualBASIC, C++, and Java). Students are also encouraged to test out of CIS 100 if they can.

For more information about the Pre-Engineering Curriculum contact Prof. Chris Graney, Pre-Engineering advisor: (502) 213-7292; christopher.graney@kctcs.edu.

Created by Prof. Graney with input from advisors at the University of Louisville Speed Scientific School and the University of Kentucky College of Engineering and the *KCTCS 2008-2009 Catalog*. The information provided here is believed to be correct at the time of production and represents Prof. Graney's research and work as an Advisor at Jefferson. However, students are ultimately responsible for their own progress towards their goals and should become familiar with the *KCTCS Catalog*, which is the binding authority on all matters regarding academic programs at Jefferson. Last revision November 10, 2008.

www.jefferson.kctcs.edu/pre-engineering