Northwest Missouri State University
Department of Natural Sciences

Pre-Engineering

Term 1	Course Title/Description	Pre-requisite	Cr Hrs	Milestone/Notes
17-120 OR 17-117 OR 17-118	Calculus I OR Precalculus OR Precalculus Algebra	Calculus I: Precalculus OR Precalculus Algebra AND Trigonometry Precalculus: Minimum ACT 22 or minimum high school GPA 3.5 Precalculus Algebra: Minimum ACT math score of 24 OR minimum high school GPA 3.8 OR minimum grade of C in MATH 17082 OR concurrent with MATH 17017	3-5	Calculus I requires minimum Math ACT 27 If opt for Precalculus Algebra must also take Trigonometry (17-119).
24-114/115	General Chemistry I & Lab		4	General Chemistry & Lab should be considered if rigorous high school chemistry is absent.
10-111	Composition I		3	
44-101 OR 44-130	Foundations of Computing OR Computers & Information Technology		3	
		Total Hours	**14-15**	
Term 2	**Course Title/Description**	**Pre-requisite**	**Cr Hrs**	**Milestone/Notes**
17-121	Calculus II	Calculus I	5	
10-112	Composition II	Composition I	3	
52-150	Principles of Macroeconomics		3	
24-116/117	General Chemistry II & Lab	General Chemistry I	5	
		Total Hours	**16**	
Term 3	**Course Title/Description**	**Pre-requisite**	**Cr Hrs**	**Milestone/Notes**
17-321	Calculus III	Calculus II	4	FALL ONLY
25-120/121	Classical Physics I & Lab	Calculus I	5	FALL ONLY
44-141	Computer Programming I		3	
		Total Hours	**12**	
Term 4	**Course Title/Description**	**Pre-requisite**	**Cr Hrs**	**Milestone/Notes**
17-361	Differential Equations	Calculus II	3	SPRING ONLY
25-230/231	Classical Physics II & Lab	Classical Physics I & Lab	5	SPRING ONLY
25-322	Statics	Classical Physics I & Lab AND Calculus II	3	
	American Experience		3	
		Total Hours	**14**	

Other courses will be taken besides those listed so that the student takes anywhere from 12 to 18 credit hours per semester. The other courses are generally chosen from the areas of Humanities and Social Sciences. The student should consult the Transfer Course Guides on the web sites of MST and UM-Columbia to determine what other courses they


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= a milestone courses taken in final year to complete degree requirements.

should take for the particular engineering major that they are interested in. For the University of Missouri at Columbia consult the site: http://engineering.missouri.edu/prospective-students/

For Missouri University of Science and Technology consult the site: http://futurestudents.mst.edu/

The courses recommended in the schedule given in this document are, for the most part, required of all engineering majors at all Universities with engineering programs. Exceptions are Composition II and Chemistry II. English Composition II is required of all engineering majors at UM-Columbia and required of most engineering majors at MST. Chemistry II is required of about half of all engineering programs. Since many pre-engineering students do not know which engineering major they want to pursue both Composition II and Chemistry II are recommended so as to keep their options open. Consult the Transfer Course Guide for the institution you are interested in to clarify course requirements.

Those students pursuing engineering programs related to chemistry or biology are usually required to take two semesters of Organic Chemistry during their sophomore year as well.

Most pre-engineering students are not ready to start with Calculus I. These students will usually start with Math 118, Precalculus Algebra, or Math 117, Precalculus. The single most important thing for any pre-engineering major to do is to take the appropriate math course every semester. These math courses are prerequisites to many of the engineering courses the student will take when they transfer to another institution.

For an excellent description of careers in engineering and the sciences as well as an outlook of job prospects in engineering and other science disciplines go to the U.S. Department of Labor, Bureau of Labor Statistics website at www.bls.gov

The Occupational Outlook Handbook can be accessed directly at http://stats.bls.gov/oco/home.htm

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