

TAMIU-TAMUK Course Map

Pre-Engineering Program (TAMIU)

and

Bachelor of Science Degrees in Engineering (TAMUK)

Architectural Engineering
Chemical Engineering
Civil Engineering
Electrical Engineering
Environmental Engineering
Mechanical Engineering
Natural Gas Engineering

A. Core Curriculum - 42 credit hours

The indicated TAMIU courses are part of the TAMIU Core Curriculum. They also substitute for the corresponding courses in the TAMUK Core Curriculum. However, TAMIU students should note that they give themselves more flexibility in course options by completing Component Areas in the Core Curriculum at TAMIU. The Component Areas are Communication; Mathematics; Life and Physical Sciences; Language, Philosophy & Culture; Creative Arts; History; Government/Political Science; and Social and Behavioral Sciences. Once a Component Area is completed at TAMIU it can substitute for the same Component Area at TAMUK without a course-by-course evaluation. In addition, completing the entire TAMIU Core Curriculum automatically satisfies the TAMUK Core Curriculum without a course-by-course evaluation.

The course map below reflects the Core Curricula for both institutions in effect with the 2014-15 academic year. Students falling under earlier versions of the Core Curricula should consult academic advisors at TAMIU and TAMUK, although in nearly all cases the courses mapped below will satisfy the core curricula in place for several years prior.

TAMIU Equivalentents			TAMUK BS Engineering Courses		
Course Number	Title	Hours	Course Number	Title	Hours
Communication – 6 credit hours					
ENGL 1301	English Composition I	3	ENGL 1301	Rhetoric & Composition I	3
ENGL 1302	English Composition II	3	ENGL 1302	Rhetoric & Composition II	3
Mathematics – 3 credit hours					
The [extra credit hour] for MATH 2413 can be counted in the Component Area Option (Other) at the end of this section. Other mathematics courses required for an engineering degree are listed in sections B and C.					
MATH 2413	Calculus I	3[+1]	MATH 2413	Calculus I	4
Life and Physical Sciences – 6 credit hours					
The labs associated with CHEM 1311 and PHYS 2325 can be counted in the Component Area Option (Other) at the end of this section. Other science courses required for an engineering degree are listed in sections B and C.					
CHEM 1311	General Chemistry I	3	CHEM 1311	Gen. Inorganic Chemistry I	3
PHYS 2325	University Physics I	3	PHYS 2325	University Physics I	3
Language, Philosophy & Culture – 3 credit hours (select one)					
<i>Various literature courses</i>	ENGL 2322, 2323, 2327, 2328, 2332, or 2333	3	<i>Various literature courses</i>	ENGL 2331, 2342, or 2362	3
PHIL 1301	Introduction to Philosophy	3	PHIL 1301	Introduction to Philosophy	3
Creative Arts – 3 credit hours					
ARTS 1303	Art History Survey: Prehistoric to Renaissance	3	ARTS 1303	Art History I	3
American History – 6 credit hours					
HIST 1301	The US to 1877	3	HIST 1301	American History to 1877	3
HIST 1302	The US Since 1877	3	HIST 1302	American History Since 1877	3
Government/Political Science – 6 credit hours					
PSCI 2305	American National Government	3	POLS 2301	Govt. & Politics of U.S	3
PSCI 2306	American State Government	3	POLS 2302	Govt. & Politics of Texas	3
Social and Behavioral Sciences – 3 credit hours (select one)					
ECON 2301	Principles of Macroeconomics	3	ECON 2301	Principles of Macroeconomics	3

PSYC 2301	Introduction to Psychology	3	PSYC 2301	Introduction to Psychology	3
SOCI 1306	Cont. Social Prob. & Soc. Policy	3	SOCI 1306	Social Problems	3
Component Area Option (Communication) – 3 credit hours					
COMM 1315	Public Speaking	3	COMS 1315	Business and Professional Communication	3
Component Area Option (Other) – 3 credit hours The extra credit hour from the Mathematics Area and the lab credits hours from the Life and Physical Sciences Area are included here.					
CHEM 1111	General Chemistry I Lab	1	CHEM 1111	Gen. Inorganic Chem. I Lab	1
MATH 2413	Calculus I	1 [+3}	MATH 2413	Calculus I	1 [+3}
PHYS 2125	University Physics I Lab	1	PHYS 2125	University Physics I Lab	1
TOTAL CREDIT HOURS		42	TOTAL CREDIT HOURS		42

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B. Other TAMIU courses that are required for most (see exceptions in parentheses) engineering degrees at TAMUK

TAMIU Equivalents			TAMUK BS Engineering Courses		
Course Number	Title	Hours	Course Number	Title	Hours
PHYS 2326	University Physics II	3	PHYS 2326	University Physics II	3
PHYS 2126	University Physics II Lab	1	PHYS 2126	University Physics II Lab	1
MATH 2414	Calculus II	4	MATH 2414	Calculus II	4
MATH 2415	Calculus III	4	MATH 3415	Calculus III (<i>math elective in Architectural Engineering and Civil Engineering; not required</i>)	4

TAMIU Equivalents			TAMUK BS Engineering Courses		
				<i>for Environmental Engineering and Natural Gas Engineering)</i>	
MATH 3330	Differential Equations	3	MATH 3320	Differential Equations	3
MATH 3310	Introduction to Linear Algebra	3	MATH 4341	Linear Algebra (<i>math elective in Architectural, Civil, and Mechanical Engineering; not required for Environmental, Natural Gas, or Chemical Engineering</i>).	3
ENGR 2372	Engineering Statistics	3	STAT 4303	Statistical Methods (<i>math elective in Mechanical Engineering; approved elective for Electrical Engineering; not required for Chemical Engineering</i>).	3
SENG 3300	Engineering Economics	3	CEEN 3317	Engineering Economy (<i>not required in Natural Gas Engineering; see note for Chemical Engineering</i>)	3

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C. TAMIU courses meeting requirements for specific engineering degrees at TAMUK

The TAMIU courses listed below fulfill the corresponding TAMUK courses. There are a few instances – because of course content or a co-requisite requirement – in which a combination of TAMIU courses (or a single course) with more credit hours is used to satisfy a single TAMUK course, thus causing TAMIU students to take more credits than their peers at TAMUK. Each TAMIU student must decide (ideally with the advice of his/her TAMIU academic advisor and the TAMUK College of Engineering Academic Advisor) if this is in his/her best interest. TAMIU students always have the option of completing these courses at TAMUK rather than TAMIU to avoid accumulating the extra credit hours.

TAMIU Equivalents			TAMUK BS Engineering Courses		
Course Number	Title	Hours	Course Number	Title	Hours
Architectural Engineering					
BIOL 1306 or GEOL 1303	Principles of Biology I or Intro. to Physical Geology	3 or 3	BIOL 1306 or GEOL 1303	General Biology I or Physical Geology	(<i>science elective; select one</i>) 3
ENGR 1204 and ENGR 1201	Engineering Graphics (2) and Found. of Engineering I (2)	4 (2+2)	AEEN 1310	Computer Graphics and Design I	3
ENGR 2305 and ENGR 2105	Prin. of Electrical Engrg. (3) and Prin. of Electrical Engrg. Lab (1)	4 (3+1)	EEEN 3331	Circuits and Electromagnetic Devices	3
ENGR 2303 and ENGR 2103	Statics & Dynamics (3) and Statics & Dynamics Lab (1)	4 (3+1)	CEEN 2301	Mechanics I	3
Only one math elective is needed. Select from Calculus III or Linear Algebra.					

TAMIU Equivalents			TAMUK BS Engineering Courses		
Chemical Engineering					
BIOL 1306	Principles of Biology I	3	BIOL 1306	General Biology I	3
CHEM 1412	Gen. Inorganic Chemistry II	4	CHEM 1312 and CHEM 1112	Gen. Inorganic Chemistry II and Gen. Inorganic Chem. II Lab	4 (3+1)
CHEM 2423	Organic Chemistry I	4	CHEM 3323 and CHEM 3123	Organic Chemistry I (3) and Organic Chemistry I Lab (1)	4 (3+1)
CHEM 2425	Organic Chemistry II	4	CHEM 3325 and CHEM 3125	Organic Chemistry II (3) and Organic Chemistry II Lab (1)	4 (3+1)
CHEM 3431	Physical Chemistry I	4	CHEM 3331	Physical Chemistry I	3
CHEM 3432	Physical Chemistry II	4	CHEM 3332	Physical Chemistry II	3
COSC 1336 and COSC 1136	Fund. of Programming (3) and Fund. of Programming Lab (1)	4 (3+1)	CSEN 2303	Introduction to Computing Using Visual Basic and Excel	3
ENGR 2303 and ENGR 2103	Statics & Dynamics (3) and Statics & Dynamics Lab (1)	4 (3+1)	MEEN 2355	Statics and Dynamics of Rigid Bodies	3
SENG 3300	Engineering Economics	3	CHEM 3315	Chemical Process Design I	3
Civil Engineering					
BIOL 1306 or GEOL 1303	Principles of Biology I or Intro. to Physical Geology	3 or 3	BIOL 1306 or GEOL 1303	General Biology I or Physical Geology (<i>science elective; select one</i>)	3 or 3
ENGR 1204 and ENGR 1201	Engineering Graphics (2) and Found. of Engineering I (2)	4 (2+2)	AEEN 1310	Computer Graphics and Design I	3
COSC 1336 and COSC 1136	Fund. of Programming (3) and Fund. of Programming Lab (1)	4 (3+1)	CSEN 2303	Introduction to Computing Using Visual Basic and Excel (<i>Computer Elective</i>)	3
ENGR 2305 and ENGR 2105	Prin. of Electrical Engrg. (3) and Prin. of Electrical Engrg. Lab (1)	4 (3+1)	EEEN 3331	Circuits and Electromagnetic Devices (<i>Special Elective</i>)	3
ENGR 2303 and ENGR 2103	Statics & Dynamics (3) and Statics & Dynamics Lab (1)	4 (3+1)	CEEN 2301	Mechanics I	3

TAMIU Equivalents			TAMUK BS Engineering Courses		
Only one math elective is needed. Select from Calculus III or Linear Algebra.					
Electrical Engineering					
COSC 1336 and COSC 1136	Fund. of Programming (3) and Fund. of Prog. Lab (1)	4	CSEN 2304	Introduction to Computer Science	3
ENGR 2303 and ENGR 2103	Statics & Dynamics (3) and Statics & Dynamics Lab (1)	4 (3+1)	MEEN 2355	Statics and Dynamics of Rigid Bodies	3
Electrical engineering students select three approved electives, in consultation with their advisor. Options include Statistics and Statics and Dynamics of Rigid Bodies. TAMIU students are encouraged to speak to a TAMUK advisor.					
Environmental Engineering					
BIOL 1306	Principles of Biology I	3	BIOL 1306	General Biology I	3
CHEM 1412	Gen. Inorganic Chemistry II	4	CHEM 1312 and CHEM 1112	Gen. Inorganic Chemistry II and Gen. Inorganic Chem. II Lab	4 (3+1)
CHEM 2423	Organic Chemistry I	4	CHEM 3323 and CHEM 3123	Organic Chemistry I (3) and Organic Chemistry I Lab (1)	4 (3+1)
COSC 1336 and COSC 1136	Fund. of Programming (3) and Fund. of Programming Lab (1)	4	EVEN 2304	Computer Methods for Environmental Engineering	3
ENGR 1204 and ENGR 1201	Engineering Graphics (2) and Found. of Engineering I (2)	4 (2+2)	MEEN 1310	Computer-Based Graphics and Design I	3
ENGR 2303 and ENGR 2103	Statics & Dynamics (3) and Statics & Dynamics Lab (1)	4	MEEN 2355	Statics and Dynamics of Rigid Bodies	3
Mechanical Engineering					
ENGR 1204 and ENGR 1201	Engineering Graphics (2) and Found. of Engineering I (2)	4 (2+2)	MEEN 1310	Computer-Based Graphics and Design I	3
COSC 1336 and COSC 1136	Fund. of Programming (3) and Fund. of Programming Lab (1)	4	MEEN 1320	Elementary Numerical Methods and Engineering Problem Solving	3
ENGR 2305 and ENGR 2105	Prin. of Electrical Engrg. (3) and Prin. of Electrical Engrg. Lab (1)	4 (3+1)	EEEN 3331	Circuits and Electromagnetic Devices	3

TAMIU Equivalents			TAMUK BS Engineering Courses		
ENGR 2303 and ENGR 2103	Statics & Dynamics (3) and Statics & Dynamics Lab (1)	4 (3+1)	CEEN 2301	Mechanics I	3
Natural Gas Engineering					
CHEM 1412	Gen. Inorganic Chemistry II	4	CHEM 1312 and CHEM 1112	Gen. Inorganic Chemistry II and Gen. Inorganic Chem. II Lab	4 (3+1)
CHEM 2423	Organic Chemistry I	4	CHEM 2421	Elementary Organic Chemistry	4
COSC 1336 and COSC 1136	Fund. of Programming (3) and Fund. of Programming Lab (1)	4 (3+1)	CSEN 2303	Introduction to Computing Using Visual Basic and Excel	3
GEOL 1303 and GEOL 1103	Intro. to Physical Geology (3) and Intro. to Phys. Geology Lab (1)	4 (3+1)	GEOL 1303 and GEOL 1103	Physical Geology and Physical Geology Lab	3
ENGR 2303 and ENGR 2103	Statics & Dynamics (3) and Statics & Dynamics Lab (1)	4 (3+1)	MEEN 2355	Statics and Dynamics of Rigid Bodies	3

Special Note for UNIV 1101/1102, All Majors					
UNIV 1101 and UNIV 1102 are required at both institutions. However, at TAMIU these two courses are part of the Core Curriculum. At TAMUK, these courses are not part of the Core Curriculum, but are included in TAMUK degree requirements.					
UNIV 1101	Learning in a Global Context I	1	UNIV 1101	Learning in a Global Context I	1
UNIV 1102	Learning in a Global Context I	1	UNIV 1102	Learning in a Global Context II	1