

**Prerequisites:** COSC 4311

**Offered:** Spring/Yearly

**COSC 4324 Emerging Technology Solutions for Business**

**3 Credit Hours**

This course is for Business majors and computer science majors. In order for this class to work, there must be a mixture of students from both disciplines. Students investigate various emerging technologies for both their business and technical potential. Teams pairing business students with computer science students will explore whether there are any business opportunities in the emerging technologies that could be exploited for a new business. Business plans and technical plans are put together as a class project. The students have an opportunity to compete in the Moot Corp competitions that are nationwide. This course may have an equivalent Business course number.

**Prerequisites:** MGMT 3311, or instructor approval

**Offered:** As Needed

**COSC 4325 Electronic Commerce and the Internet**

**3 Credit Hours**

The course provides students an understanding of issues associated with conducting electronic commerce on the Internet through case studies, in-class discussions, lectures, and course projects. Students develop an understanding of current practices and opportunities in electronic publishing and advertising, electronic shopping and distribution, and become familiar with related software development tools of HTML, XML, and others. The course will include Internet-based procurement and supply chain management issues; ethical and legal issues; and examples of successful and unsuccessful Internet firms. The course provides students with an overview of some of the technical aspects of Web site development methods and construction. The course also explores several of the problems surrounding electronic commerce such as security.

**Prerequisite:** Upper division standing in Computer Science

**Offered:** As Needed

**COSC 4366 Computer Graphics**

**3 Credit Hours**

This course is an introduction to computer graphics. Topics included are raster graphics algorithms, graphics hardware and software, projections in 3-D, geometrical transformations, object hierarchy, dialogue design, achromatic and colored light in the quest for visual realism.

**Prerequisite:** MATH 2414

**Offered:** As Needed

**COSC 4367 Special Topics in Computer Science**

**3 Credit Hours**

Special topics include: compiler design, parallelism and concurrency, computer vision, database principles, computer communications networks, internetworking and intranet working, genetic and neural computing, and simulation. Students may repeat the course as topics vary.

**Prerequisites:** Instructor approval

**Offered:** Spring/Yearly

## **PRE-ENGINEERING PROGRAM**

(Huston-Tillotson University and Prairie View A&M University)

### **Mission**

The Pre-engineering Program is to provide an opportunity for students to combine educational experiences at a small liberal arts college and a large state-supported university that lead to baccalaureate degrees in mathematics and engineering.

Huston-Tillotson University and Prairie View A&M University have developed a cooperative dual-degree program in mathematics and engineering. Under this program, Huston-Tillotson University students complete preliminary required courses and then transfer to Prairie View A&M University to complete degree requirements. Upon completion of all Pre-Engineering Program requirements, each student will be eligible to receive two degrees: a Bachelor of Science in Mathematics from Huston-Tillotson University and a Bachelor of Science in Engineering from Prairie View A&M University.

To be eligible for admission to the Pre-Engineering Program at Prairie View A&M University, students must complete at least 75 semester credit hours of course work at Huston-Tillotson University with a cumulative grade point average of 2.75 or higher on a scale of 4.0. To remain in the program while enrolled at Huston-Tillotson University, students must maintain a 2.75 or higher grade point average.

The following are the engineering degrees that a student may pursue at Prairie View A&M University:

- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Mechanical Engineering

## A SUGGESTED COURSE SEQUENCE FOR THE PRE-ENGINEERING MAJOR\*

<b>YEAR 1</b>			
<b>FALL</b>		<b>SPRING</b>	
UNIV	1201 or	Freshman Seminar	2
RAMS	1201		
Language I			3
ENGR	1111	Introduction to Engineering	1
MATH	1316	Trigonometry for Science Majors	3
ENGL	1301	Introduction College Composition	3
COSC	1300	Introduction to Computers	3
KINE	1100/1101	Personal Fitness/Sports	1
Total Hours			16
			3
		Language II	3
MATH	2312	Pre-Calculus	3
ENGR	1322	Computer Application in Engineering	3
ENGL	1302	College Rhetoric and Composition	3
KINE	1304	Health and Wellness	3
PSCI	1301	US Government	3
Total Hours			18
<b>YEAR 2</b>			
<b>FALL</b>		<b>SPRING</b>	
ENGR	2311	Economy Analysis and Technology Application	3
MATH	2413	Calculus I	4
PHYS	2425	Physics I	4
COMM	1315	Public Speaking	3
HIST	1301/1302	U.S. History I or II	3
Total Hours			17
			3
ENGR	2322	Engineering Mechanics I: Statics	3
MATH	2414	Calculus II	4
PHYS	2426	Physics II	4
		Behavioral Science	3
PHIL	2301	Philosophy and Ethics or	3
RELI	2302	Comparative Religion	3
Total Hours			17
<b>YEAR 2</b>			
<b>FALL</b>		<b>SUMMER</b>	
MATH	2415	Calculus III	4
			3
MATH	2320	Differential Equations	3
<b>YEAR 3</b>			
<b>FALL</b>		<b>SPRING</b>	
MATH	3337	Real Analysis	3
MATH	2318	Linear Algebra	3
MATH	3332	Modern Algebra	3
Diversity Core I			3
Fine Arts Core			3
Total Hours			15
			3
MATH	3335	Numerical Analysis	3
MATH	3333	Probability	3
MATH	2305 or	COSC 1323 (BS Elective)	3
Diversity Core II			3
ENGL	2331	World Literature	3
Total Hours			15

**\*NOTE: After completing the above courses at HT, the student will transfer to Prairie View A & M University in Prairie View, Texas to complete the remainder of the Engineering coursework.**

### ENGINEERING COURSES For 3/2 “Dual Degree” Engineering/Math Program with Prairie View A&M University

#### **ENGR 1111 Introduction to Engineering** **1 Credit Hour**

This course introduces students to basic engineering, computer science and technology concepts. Students will become aware of the various disciplines of engineering, computer science and technology, the ethical and professional responsibilities in these fields, as well as engineering creativity and design.

**Prerequisite: None**

**Offered Fall/As Needed**

**ENGR 1322 Computer Application in Engineering****3 Credit Hours**

This course will focus on the following: C++ and MatLab Programming language; fundamentals, program looping, conditioning statements, arrays, functions, structures, character strings, pointers, preprocessors, input and output. The course also involves engineering problem solving using computers and the use of engineering software and commercial packages.

**Prerequisite: MATH 1314 and COSC 1300****Offered Spring/As Needed****ENGR 2311 Economy Analysis and Technology Application****3 Credit Hours**

Beginning with a review of the fundamental concepts of engineering economics, this course will familiarize the students with analyzing and forecasting engineering R&D projects and portfolios. Also, there will be an emphasis on determining uncertainty of outcomes and how it can be minimized.

**Prerequisites or co-requisites: Sophomore standing, MATH 1124****Offered Fall/As Needed****ENGR 2322 Engineering Mechanics I: Statics****3 Credit Hours**

This course will focus on the following: fundamental concepts and principles; vector algebra and applications; equilibrium of particles and rigid bodies in two and three dimensions, moments and couples; distributed forces, centroids, moments of inertia, friction, and introduction to analysis of structures.

**Pre-requisites PHYS 2525 (Physics I)****Offered Spring/As Needed****CONTINUING EDUCATION (CE)**

The University may offer professionally designed workshops, seminars, and non-credit courses through the various departments. These continuing education programs are directed toward non-traditional adult students desiring short-term professional and personal enrichment. Specific programs are designed for, but not limited to, (a) the student who needs alternative college scheduling because of job commitments; (b) the individual desiring to satisfy educational objectives for career enhancement; (c) the individual desiring to explore career change options; (d) the individual needing to update skills in preparation for professional certification; and (e) the individual seeking an avenue for personal growth and reward. Scheduling of courses in this program is flexible, including day, evening and weekend arrangements – please see the Huston-Tillotson University website [www.htu.edu](http://www.htu.edu) for course listings.