CATALOG YEAR 2012-2013

COLLEGE/SCHOOL/SECTION: _____ College of Arts and Sciences_____

Course: Add: ___   Delete: ___   Change: _____
(check all that apply)
Number ___ Title ___ SCH ___ Description ___ Prerequisite _____
Response Required: **New** course will be part of major ___ minor ___ as a required ___
or elective ___ course
Response Required: **New** course will introduce ___, reinforce ___, or apply ___ concepts

If new, provide Course Prefix, Number, Title, **Measurable** Student Learning Outcomes, SCH Value, Description, prerequisite, and lecture/lab hours if applicable. If in current online catalog, provide change and attach text with changes in red and provide a brief justification.

Program: Delete: ___ Add: ___ Change: _X__   Attach new/changed Program of Study description and 4-year plan. If in current online catalog, provide change and attach text with changes in red.
B.S. Major in Systems Engineering (see the attached sheets for details)

Justification

The curriculum of B.S. Major in systems engineering is being changed by removing the "Business Track" and all business elective courses because:

1. Based on the performance of the students in the senior design course, it was observed that the students had difficulty during the understanding and implementation of technical knowledge. Currently, not all students take enough upper level engineering courses.
2. To improve the curriculum, the Engineering Advisory Board of TAMIU recommended that the Business track should be removed from the curriculum and students should be advised to complete the senior level engineering courses to become technically sound future engineers.
3. Based on ABET accreditation regulation, all courses should be offered before applying for the ABET accreditation. With the proposed changes we will be able to offer the engineering courses on a regular basis.

Minor: Add: ___ Delete: ___ Change: ___   Attach new/changed minor. If in current online catalog, provide change and attach text with changes in red.

College Introductory Pages: Add information: ___ Change information: ___
Attach new/changed information. If in current online catalog, provide change and attach text with changes in red.

Other: Add information: ___ Change information: ___ Attach new/changed information. If in

current online catalog, provide change and attach text with changes in red.

Approvals:	Signature	Date
Chair Department Curriculum Committee	_____	_____
Chair Department	_____	_____
Chair College Curriculum Committee	_____	_____
Dean	_____	_____

04/2011

System Engineering 4-Year Degree Plan (Revised March 2011)
Previous Degree Plan

See Appendix A Core Curriculum and Optional Course Information.

FALL			HOURS	SPRING			HOURS
FRESHMAN YEAR				**FRESHMAN YEAR**			
ENGL	1301	English Composition I	3	ENGL	1302	English Composition II	3
ENGR	1201	Foundations of Engr I	2	ENGR	1202	Foundations of Engr II	2
PSCI	2305	American National Govt	3	PSCI	2306	American State Govt	3
MATH	2413	Calculus I	4	MATH	2414	Calculus II	4
COSC	1136	Fundtls of Progrmg Lab	1	PHYS	2125	University Phys I Lab	1
COSC	1336	Fundtls of Progrmg	3	PHYS	2325	University Physics	3
Total			**16**				**16**
SOPHOMORE YEAR				**SOPHOMORE YEAR**			
PHYS	2126	University Phys II Lab	1	ENGR	2105	Electrical Engr Lab	1
PHYS	2326	University Physics II	3	ENGR	2305	Electrical Engineering	3
ENGL	2311	Technical Writing	3	ENGR	2372	~~Intro Design Exps~~	3
ENGR	1204	Engineering Graphics	2	ENGR	2376	Cons Prins Thrml Engr	3
ENGR	2103	Statics & Dynamics Lab	1	MATH	3310	Intro to Linear Algebra	3
ENGR	2303	Statics & Dynamics	3			Visual/Perform Arts*	3
MATH	2415	Calculus III	4				
Total			**17**				**16**
JUNIOR YEAR				**JUNIOR YEAR**			
HIST	1301	The U.S. to 1877	3	HIST	1302	The U.S. Since 1877	3
SENG	3300	Engineering Economics	3	SENG	3330	Operations Research I	3
SENG	3310	Intro to Control Systems	3	SENG	3350	Prod Plang & Control	3
SENG	3320	Engr Modeling & Design	3	SENG	3340	Robotics & Automation	3
SENG	3380	~~Engineering Statistics~~	3			~~Soc/Behavioral Sci*~~	3
		Activity/Wellness*	1	ENGL		Survey of Literature*	3
Total			**16**				**18**
SENIOR YEAR				**SENIOR YEAR**			
SENG	~~3301~~	Engr Proj Mgt & Proposal	3			~~BUS/SENG Track[1]~~	3
		~~BUS/SENG Track[1]~~	3			~~BUS/SENG Track[1]~~	3
		~~BUS/SENG Track[1]~~	3			~~BUS/SENG Elective[2]~~	3
		~~BUS/SENG Track[1]~~	3	SENG	4390	SE Senior Dgn Proj	3
		~~BUS/SENG Track[1]~~	3				
Total			**15**				**12**

TOTAL SEMESTER CREDIT HOURS: 126

~~[1]Business Track: BA 4390, MIS 3310, MKT 3310, TIL 3310, TIL 3311 and TIL 3340; Systems Engineering Track: SENG 3370, SENG 4330, SENG 4340, SENG 4350, SENG 4360 and SENG 4315 4390.~~

~~[2]Business/Systems Engineering electives, select 6 3 SCH from BA 3320, BA 4199-4399, MKT 4310, MKT 4390, SENG 4370, SENG 4380, SENG 4385, SENG 4195-4395, SENG 4199-4399, SENG 4152-4352~~

Degree Requirements for the BS with a Major in Systems Engineering

1. **Hours Required:** A minimum of **126** semester credit hours (SCH): 45 hours must be advanced, and fulfillment of degree requirements as specified in the "Requirements for Graduation" section of this catalog.
2. **University Core Curriculum: 42** SCH as outlined in the suggested plans and as specified in the "Requirements for Graduation". MATH 2413 must be taken as part of the core.
3. **Major: 51** SCH including COSC 1136, 1336, ENGR 1201, 1202, 1204, 2103, 2303, 2105, 2305, 2372, 2376, SENG 3300, 3301, 3310, 3320, 3330, 3340, 3350, 3380, and SENG 4390.
4. **Required Prescribed Track : 18** SCH from Business or Systems Engineering. Business Track: BA 4390, MIS 3310, MKT 3310, TIL 3310, TIL 3311, TIL 3340. Systems Engineering Track: SENG 3370, SENG 4330, SENG 4340, SENG 4350, SENG 4360, SENG 4315.
5. **MATH: 12** SCH including 1 SCH surplus from core and MATH 2414, MATH 2415, and MATH 3310.
6. **Business/Systems Engineering Electives**: 3 SCH selected from BA 3320, BA 4199-4399, MKT 4310, MKT 4390, SENG 4370, SENG 4380, SENG 4385, SENG 4152-4352, SENG 4195-4395, SENG 4199-4399.

~~Systems Engineering -- Tracks~~

~~Prefix and Number~~	~~Prescribed Elective Courses (Engineering Track)~~	~~SCH~~
~~SENG 3370~~	~~Computer Integrated Manufacturing~~	~~3~~
~~SENG 4330~~	~~Operations Research II~~	~~3~~
~~SENG 4340~~	~~Intelligent Systems~~	~~3~~
~~SENG 4350~~	~~Facilities Design and Logistics~~	~~3~~
~~SENG 4360~~	~~Systems Simulation~~	~~3~~
~~SENG 4315~~	~~Embedded Systems~~	~~3~~

~~Prefix and Number~~	~~Prescribed Elective Courses (Business Track)~~	~~SCH~~
~~MKT 3310~~	~~Principles of Marketing~~	~~3~~
~~MIS 3310~~	~~Management Information Systems~~	~~3~~
~~TIL 3310~~	~~Principles of Transportation~~	~~3~~
~~TIL 3311~~	~~Export/Import Operations and Practice~~	~~3~~
~~TIL 3340~~	~~Business Logistics Management~~	~~3~~
~~BA 4390~~	~~Business Strategy~~	

~~Electives~~

~~Prefix and Number~~	~~Business and Engineering Electives~~	~~SCH~~
~~BA 3320~~	~~International Business~~	~~3~~
~~BA 4199-4399~~	~~Issues in Business Administration~~	~~1-3~~
~~MKT 4310~~	~~International Marketing~~	~~3~~
~~MKT 4390~~	~~Marketing Problems and Policies~~	~~3~~
~~SENG 4370~~	~~Introduction to Virtual Manufacturing~~	~~3~~
~~SENG 4380~~	~~Quality Control and Reliability~~	~~3~~
~~SENG 4385~~	~~Special Topics in Systems Engineering~~	~~3~~
~~SENG 4195-4395~~	~~Undergraduate Research~~	~~1-3~~
~~SENG 4199-4399~~	~~Independent Study~~	~~1-3~~
~~SENG 4152-4352~~	~~Internship in Systems Engineering~~	~~1-3~~

System Engineering 4-Year Degree Plan (Revised March 2012)
Revised Degree Plan

See Appendix A Core Curriculum and Optional Course Information.

FALL			HOURS	SPRING			HOURS
FRESHMAN YEAR				**FRESHMAN YEAR**			
ENGL	1301	English Composition I	3	ENGL	1302	English Composition II	3
ENGR	1201	Foundations of Engr I	2	ENGR	1202	Foundations of Engr II	2
PSCI	2305	American National Govt	3	PSCI	2306	American State Govt	3
MATH	2413	Calculus I	4	MATH	2414	Calculus II	4
COSC	1136	Fundtls of Progrmg Lab	1	PHYS	2125	University Phys I Lab	1
COSC	1336	Fundtls of Progrmg	3	PHYS	2325	University Physics	3
Total			**16**				**16**
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PHYS	2126	University Phys II Lab	1	ENGR	2105	Electrical Engr Lab	1
PHYS	2326	University Physics II	3	ENGR	2305	Electrical Engineering	3
ENGL	2311	Technical Writing	3	ENGR	2372	Engr. Stat. and Qlty Cntrl.	3
ENGR	1204	Engineering Graphics	2	ENGR	2376	Cons Prins Thrml Engr	3
ENGR	2103	Statics & Dynamics Lab	1	MATH	3310	Intro to Linear Algebra	3
ENGR	2303	Statics & Dynamics	3			Visual/Perform Arts*	3
MATH	2415	Calculus III	4				
Total			**17**				**16**
JUNIOR YEAR				**JUNIOR YEAR**			
HIST	1301	The U.S. to 1877	3	HIST	1302	The U.S. Since 1877	3
SENG	3300	Engineering Economics	3	SENG	3330	Operations Research I	3
SENG	3310	Intro to Control Systems	3	SENG	3350	Prod Plang & Control	3
SENG	3320	Engr Modeling & Design	3	SENG	3340	Robotics & Automation	3
SENG	3380	Measurements and Devices	3	SENG	3337	Software Development	3
		Activity/Wellness*	1	ENGL		Survey of Literature*	3
Total			**16**				**18**
SENIOR YEAR				**SENIOR YEAR**			
SENG	4301	Engr Proj Mgt & Proposal	3	SENG	3370	Computer Integrated Mfg.	3
SENG	4315	Embedded Systems	3	SENG	4350	Facilities Dsgn & Logistics	3
SENG	4360	Systems Simulation	3			Engineering Elective[1]	3
		Engineering Elective[1]	3	SENG	4390	SE Senior Dgn Proj	3
		Soc/Behavioral Sci*	3				
Total			**15**				**12**

TOTAL SEMESTER CREDIT HOURS: 126

Systems Engineering Electives[1]: 6 SCH selected from ~~BA 3320, BA 4199-4399, MKT 4310, MKT 4390,~~ SENG 4330, SENG 4340, SENG 4370, SENG 4385, SENG 4195-4395, SENG 4199-4399, SENG 4152-4352.

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3. **Major:** ~~51~~ **66** SCH including COSC 1136, COSC 1336, ENGR 1201, ENGR 1202, ENGR 1204, ENGR 2103, ENGR 2303, ENGR 2105, ENGR 2305, ENGR 2372, ENGR 2376, SENG 3300, SENG ~~3301~~ 4301, SENG 3310, SENG 3320, SENG 3330, SENG 3337, SENG 3340, SENG 3350, SENG 3370, SENG 3380, SENG 4315, SENG 4350, SENG 4360, and SENG 4390. ~~**Required Prescribed Track : 18** SCH from Business or Systems Engineering. Business Track: BA 4390, MIS 3310, MKT 3310, TIL 3310, TIL 3311, TIL 3340. Systems Engineering Track: SENG 3370, SENG 4330, SENG 4340, SENG 4350, SENG 4360, SENG 4315.~~
4. **MATH: 12** SCH including 1 SCH surplus from core and MATH 2414, MATH 2415, and MATH 3310.
5. ~~**Business/**~~**Systems Engineering Electives**: 3 SCH selected from ~~BA 3320, BA 4199-4399, MKT 4310, MKT 4390,~~ SENG 4330, SENG 4340, SENG 4370, ~~SENG 4380,~~ SENG 4385, SENG 4152-4352, SENG 4195-4395, and SENG 4199-4399.

Systems Engineering Electives[1]

Prefix and Number		Engineering Electives Courses	SCH
SENG	4330	Operations Research II	3
SENG	4340	Intelligent Systems	3
SENG	4370	Introduction to Virtual Manufacturing	3
SENG	4385	Special Topics in Systems Engineering	3
SENG	4195-4395	Undergraduate Research	3
SENG	4199-4399	Independent Study	3
SENG	4152-4352	Internship in Systems Engineering	3