College Document # COAS_BC_002p
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CATALOG YEAR ___2006-8_____
(Please use separate form for each add/change)

COLLEGE/SCHOOL : ___College of Arts and Sciences__

Current Catalog Page(s) Affected _____121 & 91 _____

Program: Add: _____ Change: __X___ Attach new/changed Program of Study description and 4-year plan. If in current catalog, copy and paste the text from the and indicate changes in red.

Justification: State requires that degree plans be reduced to 120 hours when possible. This degree is an unusual degree in that it is a survey of all areas of science taught at TAMIU. This degree is designed to prepare teachers to teach in a wide range of disciplines within science. The student is introduced to Biology, Chemistry, Earth Science, Astronomy, and Physcis. The students are required to complete year long courses in Biology, Earth and Space Science (Earth Science & Astronomy), and Physics. The students are required to complete one and a half years of Chemistry as the first two courses are inorganic, and the third course is organic chemistry. Additionally organic chemistry is a required course for many of the upper level science courses. It is essential for students to gain an understanding, and be able to teach year long courses in each of these disciplines at the Grade 8-12 level, thus they need to take year long courses in these disciplines.

Students should complete 24 hours of upper level science. Students taking this degree will be taking the science composite exam. They should be exposed to upper level material Biology, Chemistry, Earth Science/Geology.

The order of the math classes is changed to reflect a logical sequence of Precalculus then Calculus. It is essential to keep statistics as the students will be expected to teach high school students about graphing and analysis of scientific data, including the use of statistics.

All science students need to gain an appreciation of hands on research. However they should not be allowed to take excessive amounts of research in place of more formal courses. In the past the students have taken advantage of a loophole in this degree plan. Limiting research to two hours will close this loophole, and bring this degree plan closer to the 120 hour rule.

Further reduction of the degree will result in going below the 45 hour rule for upper level courses. This is a joint degree with the College of Education, and involves courses required by both colleges. Due to the special requirements of both Colleges, and the

broad nature of this degree it is necessary to exceed the 120 hour rule.

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Degree Requirements for the BS with a Major in Science with Grades 8-12 Certification

1. **Hours Required:** A minimum of ~~126~~124 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".

3. **Math : 8** SCH, MATH 2412 and 2413.

4. **Major: ~~52~~ 50** SCH and the 8 SCH of BIOL 1406 and CHEM 1411 taken as part of the core. Requirements from the ~~three~~ four science areas include: a) **Earth and Space Science** -8 SCH from ASTR 1311/1111 or 1312/1112 and EPSC 1370/ 1170~~;~~, and 4 SCH taken from GEOL 3401, 3405, 3415, 3425, 4170, 4199-4499; **Life Science** – 4 SCH from BIOL 1411, 1413, or 2421;~~ 3410, 3413~~ and 8 SCH of advanced Biology electives taken from BIOL 3403, 3406, 3407, 3410, 3412, 3413, 3414, 3416, 3451, 4170, 4402, 4404, 4408, 4409, 4420, 4425, 4440, 4441, 4371-4471, ENSC 3310, 4170, 4310, 4420 or 4430; ~~and~~ **Physical Science** - PHYS 1301/1101, 1302/1102, and **Chemical Science –** 8 SCH from CHEM 1412, 2423 and ~~4~~8 SCH of advanced CHEM electives taken from CHEM 3400, 3405, 3406, 3431, 3432, 3451, 3452, 4120, 4409, 4410, 4411, 4431, 4199-4499, 4451, 4452. Additional requirement of ~~4~~ 2 SCH from any advanced science research course BIOL 4173-4473, CHEM 4173-4473, ENSC 4173-4473, GEOL 4173-4473.

5. **Professional Development: 21** SCH including: EDCI 3301, 3302, 3305, 4993 and EDDP 4324.

6. **Support Area: 3** SCH of EDRD 3320.

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BACHELOR OF SCIENCE
MAJOR IN SCIENCE
WITH GRADES 8TH - 12TH CERTIFICATION

Following is one suggested four-year degree plan. Students are encouraged to see their advisor each semester for help with program decisions and enrollment. Students are responsible for reviewing the Program of Study Requirements.
*See Appendix A Core Curriculum and Optional Course Information.

FALL			HOURS	SPRING			HOURS
FRESHMAN YEAR				FRESHMAN YEAR			
BIOL	1406	Cell&Molecular Biology	4	BIOL		Biology Elective1	4
CHEM	1411	General Chemistry I	4	CHEM	1412	General Chemistry II	4

ENGL	1301	English Composition I	3	ENGL	1302	English Composition II	3
HIST	1301	The U.S. to 1877	3	MATH	2412	Pre Calculus	4
PSCI	2305	American National Govt	3	HIST	1302	The U.S. Since 1877	3
Total			17				18

SOPHOMORE YEAR				SOPHOMORE YEAR			
~~ASTR~~		~~Earth & Space Science2~~	~~4~~	EPSC	1370	Survey of Earth Science	3
ASTR		Planetary or Stellar2	4				
CHEM	2423	Organic Chemistry	4	EPSC	1170	Earth Science Lab	1
ENGL		Survey of Literature*	3	PSCI	2306	American State Govt	3
MATH	2413	Calculus I	4	ENGL	2311	Technical Writing	3
		Activity/Wellness	1			Soc/Behavioral Science*	3
						Visual/Performing Arts*	3
Total			~~15~~16				16

JUNIOR YEAR				JUNIOR YEAR			
BIOL		Advanced Biology Elec3	4	~~BIOL~~	~~3413~~	~~Intro to Genetics~~	~~4~~
				BIOL		Advanced Biology Elec3	4
CHEM		Advanced CHEM Elec4	4	~~BIOL~~	~~3410~~	~~Ecology~~	~~4~~
				GEOL		Advanced Geology Elec5	4
PHYS	1301	General Physics I	3	PHYS	1302	General Physics II	3
PHYS	1101	General Physics Lab	1	PHYS	1102	General Physics II Lab	1
MATH	1342	Introductory Statistics	3	EDCI	3301	Public School Teaching	3
				EDCI	3302	Language Acq&Develop	3
Total			~~16~~15				18

SENIOR YEAR				SENIOR YEAR			
~~BIOL~~		~~Advanced Biology Elec~~	~~4~~	EDRD	3320	Content Reading	3
CHEM		Advanced Chemisty Elec4	4				
		~~Advanced Science Elec~~	~~4~~	EDCI	4993	Teaching Internship	9
		Science Research6	2				
EDDP	4324	Teaching Div Stu Pop	3				
EDCI	3305	Methods, Mgt&Discipline	3				
Total			~~14~~12				12

TOTAL SEMESTER CREDIT HOURS: ~~126~~ 124

1Select 4 SCH from BIOL 1411, 1413 or 2421.

2Earth & Space Science, select 4 SCH from ASTR 1311/1111 or ASTR 1312/1112.

3Biology electives, select 8 SCH from BIOL 3403, 3406, 3407, 3410, 3412, 3413, 3414, 3416, 3451, 4170, 4402, 4404, 4408, 4409, 4420, 4425, 4440, 4441, 4371-4471, ENSC 3310, 4170, 4310, 4420 or 4430.

4Chemistry elective, select 8 SCH from CHEM 3400, 3405, 3406, 3431, 3432, 3451, 3452, 4120, 4409, 4410, 4411, 4431, 4199-4499, 4451, 4452,

5 Geology elective, select 4 SCH from GEOL 3401, 3405, 3415, 3425, 4170, 4199-4499

6Science Research, select 2 SCH from BIOL 4173-4473, CHEM 4173-4473, ENSC 4173-4473, GEOL 4173-4473.

Actual degree plans may vary depending on availability of courses in a given semester.

Some courses may require prerequisites not listed.

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