

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 TAMU. 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 Physics. 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 ~~48~~ 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

ASTR		Earth & Space Science²	4
ASTR		Planetary or Stellar²	4
CHEM	2423	Organic Chemistry	4
ENGL		Survey of Literature*	3
MATH	2413	Calculus I	4
		Activity/Wellness	1
Total			15 16

SOPHOMORE YEAR

EPSC	1370	Survey of Earth Science	3
EPSC	1170	Earth Science Lab	1
PSCI	2306	American State Govt	3
ENGL	2311	Technical Writing	3
		Soc/Behavioral Science*	3
		Visual/Performing Arts*	3
Total			16

JUNIOR YEAR

BIOL		Advanced Biology Elec³	4
CHEM		Advanced CHEM Elec⁴	4
PHYS	1301	General Physics I	3
PHYS	1101	General Physics Lab	1
MATH	1342	Introductory Statistics	3
Total			16 15

JUNIOR YEAR

BIOL	3413	Intro to Genetics	4
BIOL		Advanced Biology Elec ³	4
BIOL	3410	Ecology	4
GEOL		Advanced Geology Elec ⁵	4
PHYS	1302	General Physics II	3
PHYS	1102	General Physics II Lab	1
EDCI	3301	Public School Teaching	3
EDCI	3302	Language Acq&Develop	3
Total			18

SENIOR YEAR

BIOL		Advanced Biology Elec	4
CHEM		Advanced Chemisty Elec⁴	4
		Advanced Science Elec	4
		Science Research ⁶	2
EDDP	4324	Teaching Div Stu Pop	3
EDCI	3305	Methods, Mgt&Discipline	3
Total			14 12

SENIOR YEAR

EDRD	3320	Content Reading	3
EDCI	4993	Teaching Internship	9
Total			12

TOTAL SEMESTER CREDIT HOURS: ~~126~~ 124

1>Select 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
