UNIVERSITY of HOUSTON

COLLEGE OF NATURAL SCIENCES AND MATHEMATICS
OFFICE OF THE DEAN

RECEIVED FEB 0 6 2009

Memorandum

To: Jeannette Morales

From: Ian Evans

Subject: Catalog changes reflecting the120 hour rule

Date: 4 February 2009

I am forwarding to you the modified Suggested Programs for the different degrees offered by the College of Natural Sciences and Mathematics and by the departments within the college. These changes have been approved by the college Curriculum Committee and are being forwarded for review by the Undergraduate Council. These programs have been modified to reflect the fact that, as of Fall 2008, no degree offered in this college requires more than the 120 hour minimum stipulated by the State of Texas. In addition I have included changes to the NSM college requirements section changing the number of hours needed for a degree from 122 to 120. I have attached the pages with the corrections shown in red.

Departmental Degrees

CHEM -	BA (Chemistry) Fourth Year Spring Semester electives reduced from 12 to 10 for a total of 15 hours for the semester.
	BS (Chemistry) Fourth Year Spring Semester electives reduced from 6 to 4 for a total of 16 hours for the semester.
BIOL -	BS (Medical Technology) No changes necessary
	BS (Biology) Fourth Year Spring Semester Electives 4 hours for a total of 15 hours for the semester.
	BS (Biochemical & Biophysical Sciences) Fourth Year Spring Semester 2 hours of electives removed for a semester total of 13 hours.
COSC -	BS (Software Design Option) Second Year Fall semester MATH 2331 listed in error as 4 hours (should be 3). Correct total for semester is 14 hours. With that correction total hours are 120.

BS (Systems, Science Option) Fourth Year Spring Semester electives reduced from 3 to 2 for a total of 10 hours for the semester. Editorial change – delete "NSM Capstone, Minor, or " language from Fourth Year Fall and Spring Semesters.

BS (Business Option) Second Year Fall Semester MATH 2331 listed in error as 4 hours (should be 3). Correct total for semester is correct at 14 hours. Second Year Spring Semester remove COSC 3430 (4 hours) for a total of 13 hours for the semester. Third Year Spring Semester delete Specialty Field (a reduction of 3 hours) and add COSC 3380 (3 hours). Total hours for semester remains at 15.

GEOL - BS (Geology) 120 hours as in online catalog.

BS (Geophysics)Third Year Spring Semester approved electives reduced from 3 to 1 for a total of 14 hours for the semester.

BA (Earth Science) Third Year Spring Semester Approved electives go from 3 to 4 (addition of 1 hour) for a total of 15 hours for the semester to bring the requirements up to the required 120 hours.

MATH BS (Mathematical Finance) no change necessary

BA (Mathematics) no change necessary

BS (Mathematics) no change necessary

PHYS BS (Physics) First Year Fall Semester remove PHYS 1110 (I hour) for a semester total of 14 hours.

BS (Geophysics Option) First Year Fall Semester remove PHYS 1110 (I hour) for a semester total of 14 hours.

BA (Physics) First Year Fall Semester remove PHYS 1110 (I hour) for a semester total of 14 hours.

College Degrees

ENVS BS (Environmental Chemistry Option) First Year Spring Semester (Editorial correction – GEOL 1330 & 1130 = 4 required hours – total hours for semester =15). Third Year Fall Semester elective hours - 1 (reduced by 2) for a semester total of 15.

BS (Environmental Modeling Option) – See Environmental Chemistry Option.

BS (Environmental Geology Option) Third Year Fall Semester elective hours 1 (reduced by 2) for a semester total of 15.

BS (Atmospheric Science Option) Second Year Spring Semester (Editorial correction – GEOL 1330 & 1130 = 4 required hours – total hours for semester =15). Third Year Fall Semester elective hours - 1 (reduced by 2) for a semester total of 15. Fourth Year Spring Semester NSM capstone shown as 3-4 (delete 4) for a semester total of 15.

Interdisciplinary Science

BISC (Option 1) no changes necessary

BISC (Option 2) no changes necessary

Departmental Degrees in NS&M

BIOL	BS (Biology)
	BS (Biochemical and Biophysical Sciences)
	BS (Medical Technology)
CHEM	BA (Chemistry)
	BS (Chemistry)
COSC	BS (Business Option)
	BS (Systems, Science Option)
	BS (Software Design Option)
GEOL	BA (Earth Science)
	BS (Geology)
	BS (Geophysics)
MATH	BA (Mathematics)
	BS (Mathematics)
	BS (Finance Option)
	BS (Mathematical Finance
PHYS	BA (Physics)
	BS (Physics)
	BS (Geophysics Option)

College Degrees

Environmental Science and Program in Environmental Systems and Modeling

BS (Atmospheric Science Option)

BS (Environmental Geology Option)

BS (Environmental Chemistry Option)

BS (Environmental Modeling Option)

Interdisciplinary Science

BISC (Option 1)

BISC (Option 2)

BIOL

Medical Technology Degree Plan

First Year

Fall and Spring Semesters	Hours
BIOL 1361/1161 and 1362/1162. Introduction to Biological Science and Laboratory	8
CHEM 1331 and 1111. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
CHEM 1332 and 1112. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
ENGL 1303. Freshman Composition I	3

8 of 87

ENGL 1304. Freshman Composition II	3
MATH 1330. Precalculus	3
MATH 1431. Calculus I	4
Social Sciences Core Course	3
Total	**32**

Summer Session	**Hours**
HIST 1377. The United States to 1877 or equivalent	3
HIST 1378. The United States Since 1877 or equivalent	3
Total	**6**

Second Year

Fall and Spring Semesters	**Hours**
BIOL 2333 and 2133. Elementary Microbiology and Elementary Microbiology Laboratory	4
BCHS 3201 and 3304. Biochemistry Laboratory and General Biochemistry I	5
CHEM 3331 and 3221. Fundamentals of Organic Chemistry and Fundamentals of Organic Chemistry Laboratory	5
CHEM 3332 and 3222. Fundamentals of Organic Chemistry and Fundamentals of Organic Chemistry Laboratory	5
PHYS 1301 and 1101. Introductory General Physics and General Physics Laboratory I	4
PHYS 1302 and 1102. Introductory General Physics and General Physics Laboratory II	4
Humanities Core Course	3
Total	**30**

Summer Session	**Hours**
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3

9 of 87

POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Total	**6**

Third Year

Fall and Spring Semesters	**Hours**
BIOL 4272. Cellular Biology Laboratory	2
BIOL 4373 or 4374. Microbial Physiology or Cell Biology	3
BIOL 4323. Immunology	3
BIOL 3324 and 3124. Human Physiology and Human Physiology Laboratory	4
CHEM 3369 and 3119. Analytical Chemistry and Analytical Chemistry Laboratory	4
NSM Capstone Courses	6
Visual/Performing Arts Core Course	3
Formal Science Course	3-4
Writing in the Discipline Core Course	3
Total	**31-32**

10 of 87

Bachelor of Science Biochemical and Biophysical Sciences Suggested Program

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I [1]	3

11 of 87

CHEM 1331 and 1111. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
MATH 1330. Precalculus [2]	3
BIOL 1361, 1161. Introduction to Biological Science, Laboratory	4
Total	**14**

Spring Semester	**Hours**
ENGL 1304. Freshman Composition II [1]	3
CHEM 1332 and 1112. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
MATH 1431. Calculus I	4
BIOL 1362, 1162. Introduction to Biological Science, Laboratory	4
Total	**15**

Second Year

Fall Semester	**Hours**
Visual/Performing Arts Core Course	3
CHEM 3331 and 3221. Fundamentals of Organic Chemistry and Fundamentals of Organic Chemistry Laboratory	5
MATH 1432. Calculus II	4
BIOL 3301. Genetics	3
Total	**15**

Spring Semester	**Hours**
Humanities Core Course	3
CHEM 3332 and 3222. Fundamentals of Organic Chemistry and Fundamentals of Organic Chemistry Laboratory	5

12 of 87

BCHS 3304 and 3201. General Biochemistry I and Biochemistry Laboratory I	5
MATH 2433. Calculus III	4
Total	**17**

Third Year

Fall Semester	**Hours**
PHYS 1301 and 1101. Introductory General Physics and General Physics Laboratory I	4
BCHS 3305 General Biochemistry II	3
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
HIST 1377. The United States to 1877 or equivalent	3
Social Sciences Core Course	3
Total	**16**

Spring Semester	**Hours**
PHYS 1302 and 1102. Introductory General Physics and General Physics Laboratory II	4
Biochemical and Biophysical Sciences Elective	3
POLS 1337. US Government: Congress, President, and Courts or equivalent	3
HIST 1378. The United States Since 1877 or equivalent	3
Electives	2
Total	13

Fourth Year

Fall Semester	**Hours**

CHEM 4373. Survey of Physical Chemistry, or CHEM 4370. Physical Chemistry I	3
BCHS 4306. Nucleic Acids [3]	3
Biochemical and Biophysical Sciences Elective	6
NSM Capstone Course	3
Total	**15**

All students are responsible for the completion of 36 advanced semester hours required for a University of Houston degree.

Spring Semester	**Hours**
BCHS 4304. Physical Biochemistry II [4]	3
BCHS 4311. Biochemistry Laboratory II [5]	3
Biochemical and Biophysical Sciences Electives	3
NSM Capstone Course	3
Writing in the Discipline Core Course	3
Total	**15**

Suggested Program - Bachelor of Science in Biology

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I [1]	3
CHEM 1331 and 1111. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
MATH 1330. Precalculus [2]	3
BIOL 1361, 1161. Introduction to Biological Science, Laboratory	4
Total	**14**

Spring Semester	Hours
ENGL 1304. Freshman Composition II [1]	3
CHEM 1332 and 1112. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
MATH 1431. Calculus I	4
BIOL 1362, 1162. Introduction to Biological Science, Laboratory	4
Total	**15**

15 of 87

Second Year

Fall Semester	Hours
CHEM 3331 and 3221. Fundamentals of Organic Chemistry and Fundamentals of Organic Chemistry Laboratory	5
BIOL 3301, BIOL 3311. Genetics and Genetics Laboratory	6
MATH 1432. Calculus II	4
Total	**15**

Spring Semester	Hours
Electives (e.g., CHEM 3222 and 3332. Fundamentals of Organic Chemistry and Fundamentals of Organic Chemistry Laboratory)	5
BCHS 3304. General Biochemistry I	3
BIOL 3306. Evolutionary Biology	3
HIST 1377. The United States to 1877 or equivalent	3
Total	**14**

Third Year

Fall Semester	Hours
BIOL 3407 or MATH 2433	4
BIOL 4206 or 4272 or BCHS 3201	2
BIOL 4374. Cell Biology	3
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
PHYS 1301 and 1101. Introductory General Physics and General Physics Laboratory I	4
Total	**16**

16 of 87

Spring Semester	Hours
HIST 1378. The United States Since 1877 or equivalent	3
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
PHYS 1302 and 1102. Introductory General Physics and General Physics Laboratory II	4
Biology Electives	4
Social Sciences Core Course	3
Total	**17**

Fourth Year

Fall Semester	Hours
Biology Electives	4
Electives	4
Humanities Core Course	3
NSM Capstone Course	3
Total	**14**

Spring Semester	Hours
BIOL 4103 Integration of Biological Knowledge[3]	1
Biology Electives	4
NSM Capstone Course	3
Visual/Performing Arts Core Course	3
Electives	4 (5)
Total	**15** (16)

All students are responsible for the completion of 36 advanced semester hours required for a University of Houston degree.

- return to top -

CHEM

18 of 87

Suggested Program - Bachelor of Arts in Chemistry

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I	3

19 of 87

CHEM 1331 and 1111. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
MATH 1330. Precalculus [2]	3
HIST 1377. The United States to 1877 or equivalent	3
Social Sciences Core Course	3
Total	**16**

Spring Semester	**Hours**
ENGL 1304. Freshman Composition II	3
CHEM 1332 and 1112. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
MATH 1431. Calculus I	4
HIST 1378. The United States Since 1877 or equivalent	3
Total	**14**

Second Year

Fall Semester	**Hours**
CHEM 3331 and 3221. Fundamentals of Organic Chemistry and Fundamentals of Organic Chemistry Laboratory	5
MATH 1432. Calculus II	4
PHYS 1321. University Physics I	3
Writing in the Discipline Core Course	3
Total	**15**

Spring Semester	**Hours**
CHEM 3332 and 3222. Fundamentals of Organic Chemistry and Fundamentals of Organic Chemistry Laboratory	5
MATH 2433. Calculus III	4

20 of 87

PHYS 1322. University Physics II	3
PHYS 1121. Physics Laboratory I	1
Elective	3
Total	**16**

Third Year

Fall Semester	Hours
CHEM 4370 or 4373 Physical Chemistry I or Survey of Physical Chemistry	3
PHYS 1122. Physics Laboratory II	1
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Foreign Language (2000-level)	3
Visual/Performing Arts Core Course	3
Total	**13**

Spring Semester	Hours
Chemistry Elective	3
NSM Capstone, Minor or Elective Courses	3
Foreign Language (2000-level)	3
Humanities Core Course	3
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Total	**15**

Fourth Year

Fall Semester	Hours
Chemistry Electives	6
NSM Capstone, Minor or Elective Courses	10
Total	**16**

21 of 84

Spring Semester	Hours
Chemistry Electives	5
NSM Capstone, Minor or Elective Courses	~~12~~ 10
Total	~~17~~ 15

22 of 87

Bachelor of Science in Chemistry

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I	3
CHEM 1331 and 1111. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
MATH 1330. Precalculus [2]	3
Social Sciences Core Course	3
HIST 1377. The United States to 1877 or equivalent	3
Total	**16**

Spring Semester	Hours
ENGL 1304. Freshman Composition II	3
CHEM 1332 and 1112. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
MATH 1431. Calculus I	4
HIST 1378. The United States Since 1877 or equivalent	3
Total	**14**

Second Year

Fall Semester	Hours
CHEM 3331 and 3221. Fundamentals of Organic Chemistry and Fundamentals of Organic Chemistry Laboratory	5
CHEM 2233 and CHEM 2133. Inorganic Chemistry I and Inorganic Chemistry Laboratory	3
MATH 1432. Calculus II	4

23 of 87

PHYS 1321. University Physics I	3
Total	**15**

Spring Semester	**Hours**
CHEM 3369 and 3119. Analytical Chemistry and Analytical Chemistry Laboratory	4
CHEM 3332 and 3222. Fundamentals of Organic Chemistry II and Fundamentals of Organic Chemistry Laboratory II	5
PHYS 1322 and PHYS 1121. University Physics II and Physics Laboratory I	4
MATH 2433. Calculus III	4
Total	**17**

Third Year

Fall Semester	**Hours**
CHEM 4370. Physical Chemistry I	3
CHEM 4270. Physical Chemistry I Laboratory	2
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Natural Sciences Approved Course	3
Visual/Performing Arts Core Course	3
PHYS 1122. Physics Laboratory II	1
Total	**15**

Spring Semester	**Hours**
CHEM 4372. Physical Chemistry II	3
CHEM 4272. Physical Chemistry Laboratory II	2
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Writing in the Discipline Core Course	3
Humanities Core Course	3

Total	**14**

Fourth Year

Fall Semester	**Hours**
CHEM 4369. Instrumental Methods of Analysis	3
CHEM 4229. Instrumental Methods of Analysis Laboratory	2
Natural Sciences Approved Course	3
NSM Capstone, Minor, or Electives	7
Total	**15**

Spring Semester	**Hours**
CHEM 4365. Inorganic Chemistry II	3
CHEM 4115. Inorganic Chemistry Laboratory II	1
Either CHEM 3336. Organic Chemistry of Biological Molecules or CHEM 4336. Fundamental Biochemistry	3
Chemistry Elective	3
NSM Capstone, Minor, or Electives	4
Total	**14**

Cosc

Suggested Program - Bachelor of Science in Computer Science (Business Option)

First Year

Fall Semester	Hours
COSC 1410. Introduction to Computer Science I	4
ENGL 1303. Freshman Composition I [1]	3
HIST 1377. The United States to 1877 or equivalent	3
MATH 1431. Calculus I	4
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Total	**17**

Spring Semester	Hours
COSC 1320. Introduction to Computer Science II	3

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ENGL 1304. Freshman Composition II [1]	3
HIST 1378. The United States Since 1877 or equivalent	3
MATH 1432. Calculus II	4
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Total	**16**

Second Year

Fall Semester	**Hours**
COSC 2320. Data Structures	3
COSC 2410. Computer Organization and Programming	4
MATH 2331. Linear Algebra	~~4~~ 3
Natural Science Approved Course	3
Natural Science Laboratory [6]	1
Total	**14**

Spring Semester	**Hours**
ACCT 2331. Accounting Theory I	3
COSC 3320. Algorithms and Data Structures	3
COSC 3430. Computer Architecture	4
Social Sciences Core Course	3
Natural Science Approved Course	3
Natural Science Laboratory [6]	1
Total	~~17~~ 13

Third Year

Fall Semester	**Hours**
COSC 3430. Computer Architecture	4

28 of 87

MATH 3336. Discrete Mathematics	3
MATH 3338. Probability and Statistics	3
ACCT 2332. Operational Uses of Financial Data	3
Writing in the Discipline Core Course	3
Total	**16**

Spring Semester	**Hours**
COSC 3340. Introduction to Automata and Computability	3
COSC 3380 Introduction to File and Database Systems	3
COSC 4351. Fundamentals of Software Engineering	3
MATH 3339. Probability and Statistics	3
Specialty Field [7]	3
Natural Science Approved Course	3
Total	**15**

Fourth Year

Fall Semester	**Hours**
COSC 4330. Fundamentals of Operating Systems	3
Computer Science Approved Electives (3000- or 4000-level)	3
Specialty Field [7]	3
Humanities Core Course	3
Natural Science Approved Course	3
Total	**15**

Spring Semester	**Hours**
COSC 4211. Computer Scientists and the Society	2
Computer Science Approved Electives (3000- or 4000-level)	6
Specialty Field [7]	3

Visual/Performing Arts Core Course	3
Total	**14**

Suggested Program - Bachelor of Science in Computer Science (Systems, Science Option)

First Year

Fall Semester	Hours
COSC 1410. Introduction to Computer Science I	4

31987

ENGL 1303. Freshman Composition I [1]	3
HIST 1377. The United States to 1877 or equivalent	3
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
MATH 1431. Calculus I	4
Total	**17**

Spring Semester	**Hours**
COSC 1320. Introduction to Computer Science II	3
ENGL 1304. Freshman Composition II [1]	3
HIST 1378. The United States Since 1877 or equivalent	3
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
MATH 1432. Calculus II	4
Total	**16**

Second Year

Fall Semester	**Hours**
COSC 2320. Data Structures	3
COSC 2410. Computer Organization and Programming	4
MATH 2433. Calculus III	3
PHYS 1321. University Physics [1, 6]	4
Social Sciences Core	3
Total	**17**

Spring Semester	**Hours**
COSC 3320. Algorithms and Data Structures	3
MATH 2331. Linear Algebra	3
PHYS 1322. University Physics II [1, 6]	3

32 of 87

Writing in the Discipline Core Course	3
Total	**12**

Third Year

Fall Semester	**Hours**
COSC 3430. Computer Architecture	4
MATH 3336. Discrete Mathematics	3
MATH 3338. Probability and Statistics	3
Humanities Core Course	3
Natural Sciences Approved Course	3
Natural Science Laboratory [6]	1
Total	**17**

Spring Semester	**Hours**
COSC 3340. Introduction to Automata and Computability	3
COSC 3380. Introduction to File and Database Systems	3
COSC 4351. Fundamentals of Software Engineering	3
MATH 3339. Probability and Statistics	3
Natural Science Approved Course	3
Natural Science Laboratory [6]	1
Total	**16**

Fourth Year

Fall Semester	**Hours**
COSC 4330. Fundamentals of Operating Systems	3
Computer Science Approved Electives (3000- or 4000-level)	6
Mathematics Approved Elective (4000-level)	3
NSM Capstone, Minor, or Elective Course	3

33 of 87

Total	**15**

Spring Semester	**Hours**
COSC 4211. Computer Scientists and the Society	2
Computer Science Approved Electives (3000- or 4000-level)	3
~~NSM Capstone, Minor, or~~ Elective Course	2
Visual/Performing Arts Core Course	3
Total	10

Suggested Program - Bachelor of Science in Computer Science (Software Design Option)

35 of 87

First Year

Fall Semester	Hours
COSC 1410. Introduction to Computer Science I	4
ENGL 1303. Freshman Composition I [1]	3
HIST 1377. The United States to 1877 or equivalent	3
MATH 1431. Calculus I	4
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Total	**17**

Spring Semester	Hours
COSC 1320. Introduction to Computer Science II	3
ENGL 1304. Freshman Composition II [1]	3
HIST 1378. The United States Since 1877 or equivalent	3
MATH 1432. Calculus II	4
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Total	**16**

Second Year

Fall Semester	Hours
COSC 2320. Data Structures	3
COSC 2410. Computer Organization and Programming	4
MATH 2331. Linear Algebra	3

36 of 87

Natural Science Approved Course	3
Natural Science Laboratory [6]	1
Total	15 14

Spring Semester	**Hours**
COSC 3320. Algorithms and Data Structures	3
COSC 3351. Software Design	3
Social Sciences Core Course	3
Writing in the Discipline Core Course	3
Natural Science Approved Course	3
Natural Science Laboratory [6]	1
Total	**16**

Third Year

Fall Semester	**Hours**
COSC 3430. Computer Architecture	4
MATH 3336. Discrete Mathematics	3
MATH 3338. Probability and Statistics	3
Humanities Core Course	3
Natural Science Approved Course	3
Total	**16**

Spring Semester	**Hours**
COSC 3340. Introduction to Automata and Computability	3
COSC 3380. Introduction to File and Database Systems	3
COSC 4351. Fundamentals of Software Engineering	3
MATH 3339. Probability and Statistics	3

37 of 87

Natural Science Approved Course	3
Total	**15**

Fourth Year

Fall Semester	**Hours**
COSC 4330. Fundamentals of Operating Systems	3
COSC 4352. Software Development Practices	3
Computer Science Approved Electives (3000- or 4000-level)	6
Total	**15**

Spring Semester	**Hours**
COSC 4211. Computer Scientists and the Society	2
Computer Science Approved Electives (3000- or 4000-level)	3
NSM Capstone, Minor, or Elective Course	3
Visual/Performing Arts Core Course	3
Total	**11**

GEOL

39 of 87

Suggested Program - Bachelor of Arts in Earth Science

First Year

Fall Semester	Hours
GEOL 1130. Physical Geology Laboratory	1
GEOL 1330. Physical Geology	3
CHEM 1111. Fundamentals of Chemistry Laboratory	1
CHEM 1331. Fundamentals of Chemistry	3
ENGL 1303. Freshman composition I [1]	3
HIST 1377. The United States to 1877 or equivalent	3
MATH 1310. College Algebra	3
Total	**17**

Spring Semester	Hours
GEOL 1176. Historical Geology Laboratory	1
GEOL 1376. Historical Geology	3
CHEM 1112. Fundamentals of Chemistry Laboratory	1
CHEM 1332. Fundamentals of Chemistry	3
ENGL 1304. Freshman Composition II [1]	3
HIST 1378. The United States Since 1877 or equivalent	3
MATH 1330. Precalculus	3
Total	**17**

Second Year

Fall Semester	Hours
GEOL 3370. Mineralogy	3
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Foreign Language at the 2000-level	3
Visual/Performing Arts Core	3
Approved Elective	3

40 of 87

Total	**15**

Spring Semester	**Hours**
GEOL 3340. Geologic Field Methods	3
GEOL 3372. Petrography	3
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Foreign Language at the 2000-level	3
Humanities Core Course	3
Total	**15**

Third Year

Fall Semester	**Hours**
GEOL 3177. Introductory Oceanography Laboratory	1
GEOL 3377. Introductory Oceanography	3
PHYS 1101. Introductory General Physics Laboratory	1
PHYS 1301. Introductory General Physics	3
Approved GEOL Elective	1
Social Sciences Core Course	3
Approved Elective	3
Total	**15**

Spring Semester	**Hours**
GEOL 3178. Introduction to Atmospheric Science and Weather Information Laboratory	1
GEOL 3378. Introduction to Atmospheric Science and Weather Information	3
PHYS 1102. Introductory General Physics Laboratory	1
PHYS 1302. Introductory General Physics	3
Writing in the Discipline Core Course	3
Approved Elective	4
Total	~~14~~ 15

Fourth Year

41 of 87

Fall Semester	Hours
BIOL 1361. Introduction to Biological Science I	3
BIOL 1161.Introduction to Biological Science I Lab	1
Approved GEOL Elective (Advanced)	3
Approved Elective (Advanced) (NSM Capstone Requirement)	3
Approved Elective (Advanced)	3
Total	**13**

Spring Semester	Hours
BIOL 1362. Introduction to Biological Science II	3
BIOL 1162. Introduction to Biological Science II Lab	1
Approved GEOL Elective (Advanced)	3
Approved Elective (Advanced) (NSM Capstone Requirement)	3
Approved Elective (Advanced)	3
Total	**13**

Suggested Program - Bachelor of Science in Geology

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I[1]	3
CHEM 1111. Fundamentals of Chemistry Laboratory	1
CHEM 1331 Fundamentals of Chemistry	3
GEOL 1130. Physical Geology Laboratory	1
GEOL 1330. Physical Geology	3

43 of 87

MATH 1431. Calculus I [8]	4
Total	**15**

Spring Semester	**Hours**
ENGL 1304. Freshman Composition II [1]	3
CHEM 1112. Fundamentals of Chemistry Laboratory	1
CHEM 1332. Fundamentals of Chemistry	3
MATH 1432. Calculus II	4
Elective (GEOL 1376, 1176: Historical Geology and Laboratory recommended)	4
Total	**15**

Second Year

Fall Semester	**Hours**
GEOL 3370. Mineralogy	3
GEOL 3130. Principles of Paleobiology Laboratory	1
GEOL 3330. Principles of Paleobiology	3
MATH 2433. Calculus III	4
PHYS 1321. University Physics I [1]	3
PHYS 1121. Physics I Laboratory	1
Total	**15**

Spring Semester	**Hours**
GEOL 3340. Geologic Field Methods	3
GEOL 3372. Petrography	3
PHYS 1121. University Physics II Laboratory	1
PHYS 1322. University Physics II [1]	3
Visual and Performing Arts Core Course	3
Writing in the Discipline Core Course	3
Total	**16**

44 of 87

Third Year

Fall Semester	Hours
GEOL 3150. Principles of Stratigraphy Laboratory	1
GEOL 3350. Principles of Stratigraphy	3
GEOL 3373. Igneous and Metamorphic Petrogenesis	3
GEOL 4330. Introduction to Geophysics	3
HIST 1377. The United States to 1877 or equivalent	3
Social and Behavioral Science Core	3
Total	**16**

Spring Semester	Hours
GEOL 3145. Structural Geology Laboratory	1
GEOL 3345. Structural Geology	3
GEOL 3374. Sedimentary Petrogenesis	3
HIST 1378. The United States Since 1877 or equivalent	3
Approved Elective	3
Total	**13**

Summer Session	Hours
GEOL 3355 and 3360. Field Geology [2]	6
Total	**6**

Fourth Year

Fall Semester	Hours
Geoscience Elective (3000- or 4000-level)	3
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Approved Elective	6
Total	**12**

Spring Semester	**Hours**
Geoscience Elective (3000- or 4000-level)	3
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Approved Elective	6
Total	**12**

Suggested Program - Bachelor of Science in Geophysics

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I [1]	3
CHEM 1111. Fundamentals of Chemistry Laboratory	1
CHEM 1331. Fundamentals of Chemistry	3
GEOL 1130. Physical Geology Laboratory	1
GEOL 1330. Physical Geology	3
MATH 1431. Calculus I [8]	4
Total	**15**

Spring Semester	Hours
ENGL 1304. Freshman Composition II [1]	3
CHEM 1112. Fundamentals of Chemistry Laboratory	1
CHEM 1332. Fundamentals of Chemistry	3
MATH 1432. Calculus II	4
Social and Behavioral Sciences Core	3
Total	**14**

Second Year

47 of 87

Fall Semester	Hours
GEOL 3370. Mineralogy	3
MATH 2433. Calculus III	4
PHYS 1121. Physics I Laboratory	1
PHYS 1321. University Physics I	3
Writing in the Discipline Core Course	3
Visual/Performing Arts Core Course	3
Total	**17**

Spring Semester	Hours
GEOL 3340. Geologic Field Methods	3
GEOL 3372. Petrography	3
MATH 3321. Engineering Math	3
PHYS 1122. Physics Laboratory II	1
PHYS 1322. University Physics II	3
Humanities Core	3
Total	**16**

Third Year

Fall Semester	Hours
GEOL 4330. Introduction to Geophysics	3
GEOL 3150. Principles of Stratigraphy Laboratory	1
GEOL 3350. Principles of Stratigraphy and Principles of Stratigraphy Laboratory	3
MATH 3363. Introduction to Partial Differential Equations	3
HIST 1377. The United States to 1877 or equivalent	3
Total	**14**

Spring Semester	Hours
GEOL 3145. Structural Geology Laboratory	1
GEOL 3345. Structural Geology	3
Geophysics Elective (3000- or 4000-level)	3
MATH 3364. Introduction to Complex Analysis	3

48 of 87

HIST 1378. The United States Since 1877 or equivalent	3
Approved Elective	3 1
Total	15 14

Fourth Year

Fall Semester	**Hours**
Geology-Geophysics Elective (3000- or 4000-level)	3
Geophysics Elective (3000- or 4000-level)	3
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Approved Elective (NSM Capstone Requirement)	3
Approved Elective	3
Total	**15**

Spring Semester	**Hours**
Geology-Geophysics Elective (3000- or 4000-level)	3
Geophysics Electives (3000- or 4000-level)	6
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Approved (NSM Capstone Requirement)	3
Total	**15**

49 of 87

MATH

50 of 87

Suggested Program - Bachelor of Arts in Mathematics

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I (Communication Core)	3
MATH 1431. Calculus I [10]	4

51 of 87

Foreign Language [11]	5
HIST 1377. The United States to 1877	3
Total	**15**

Spring Semester	**Hours**
ENGL 1304. Freshman Composition II (Communication Core)	3
MATH 1432. Calculus II	4
Foreign Language [11]	5
HIST 1378. The United States Since 1877	3
Total	**15**

Second Year

Fall Semester	**Hours**
MATH 2331: Linear Algebra	3
MATH 2433: Calculus III	4
Natural Science [12]	3
Foreign Language [11]	3
Social Sciences Core	3
Total	**16**

Spring Semester	**Hours**
MATH 3330. Abstract Algebra	3
MATH 3331. Differential Equations	3
Natural Science with lab [12]	4
Foreign Language [11]	3
Writing in the Discipline Core Course	3
Total	**16**

Third Year

Fall Semester	**Hours**
MATH 3333. Intermediate Analysis	3
MATH Elective (3000-level)	3
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3

52 of 87

Humanities Core	3
Electives [13]	4
Total	**16**

Spring Semester	**Hours**
MATH 3334: Advanced Multivariable Calculus, or 3335: Vector Analysis, or 3364: Intro to Complex Analysis	3
MATH Elective (3000- or 4000-level)	3
POLS 1337. U.S. Government: Congress, President and Courts	3
Visual and Performing Arts Core	3
Free Electives [13]	3
Total	**15**

Fourth Year

Fall Semester	**Hours**
Math Electives (4000-level) [15]	6
NSM Capstone [16]	3
Free Electives [13]	6
Total	**15**

Spring Semester	**Hours**
MATH 4389. Survey of Undergraduate Mathematics	3
Math Elective (4000-level) [15]	3
NSM Capstone [16]	3
Free Elective [13]	3
Total	**12**

53 of 87

Bachelor of Science in Mathematics

First Year

Fall Semester	Hours
MATH 1431: Calculus I [10]	4
ENGL 1303 . Freshman Composition I (Communication Core)	3
HIST 1377: The United States to 1877	3
Natural Science with/lab [14]	4
Total	**14**

Spring Semester	Hours
MATH 1432: Calculus II	4
ENGL 1304 . Freshman Composition II (Communication Core)	3
HIST 1378: The United States Since 1877	3
Natural Science with lab [14]	4
Social Science Core	3
Total	**17**

Second Year

Fall Semester	Hours
MATH 2331. Linear Algebra	3
MATH 2433. Calculus III	4
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Natural Science [14]	3
Humanities Core	3
Total	**16**

Spring Semester	Hours
MATH 3330. Abstract Algebra	3
MATH 3331. Differential Equations	3
POLS 1337. U.S. Government: Congress, President and Courts	3
Natural Science [14]	3

54687

Writing in the Discipline Core Course	3
Total	**15**

Third Year

Fall Semester	**Hours**
MATH 3333. Intermediate Analysis	3
MATH Electives (3000-level)	3
COSC 1410. Introduction to Computer Science	4
Visual and Performing Arts Core	3
Elective [13]	3
Total	**16**

Spring Semester	**Hours**
MATH 3334: Advanced Multivariable Calculus, 3335: Vector Analysis, or 3364: Intro to Complex Analysis	3
Math Elective (3000- or 4000-level)	3
COSC 1320: Introduction to Computer Science II	3
Electives [13]	6
Total	**15**

Fourth Year

Fall Semester	**Hours**
MATH Electives (4000-level) [15]	6
NSM Capstone [16]	3
Electives [13]	6
Total	**15**

Spring Semester	**Hours**
MATH 4389. Survey of Undergraduate Mathematics	3
Math Electives (4000-level) [15]	3
NSM Capstone [16]	3

Elective[13]	3
Total	**12**

Suggested Program - Bachelor of Science in Mathematics - Finance Option

First Year

Fall Semester	Hours
MATH 1431: Calculus I [10]	4
ENGL 1303 . Freshman Composition I (Communication Core)	3
HIST 1377: The United States to 1877	3
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Natural Science with/lab [14]	4
Total	**17**

Spring Semester	Hours
MATH 1432: Calculus II	4
ENGL 1304 . Freshman Composition II (Communication Core)	3
HIST 1378: The United States Since 1877	3
POLS 1337. U.S. Government: Congress, President and Courts	3
Natural Science with lab [14]	4
Total	**17**

Second Year

Fall Semester	Hours
MATH 2331. Linear Algebra	3

57 of 87

MATH 2433. Calculus III	4
ACCT 2331. Accounting Principles I - Financial	3
ECON 3332. Intermediate Microeconomic Theory	3
Natural Science [14]	3
Total	**16**

Spring Semester	**Hours**
MATH 3330. Abstract Algebra	3
MATH 3331. Differential Equations	3
ACCT 2322. Accounting Principles II - Managerial	3
ECON 3334. Intermediate Microeconomic Theory	3
Natural Science [14]	3
Total	**15**

Third Year

Fall Semester	**Hours**
MATH 3333. Intermediate Analysis	3
MATH 3338. Probability	3
MATH 3363. Introduction to Partial Differential Equations	3
COSC 1410. Introduction to Computer Science	4
Humanities Core	3
Total	**16**

Spring Semester	**Hours**
MATH 3339. Statistics	3
MATH 3364: Intro to Complex Analysis	3
COSC 1320: Introduction to Computer Science II	3
Visual and Performing Arts Core	3
Electives [13]	3
Total	**15**

58 of 87

Fourth Year

Fall Semester	Hours
MATH 3340. Introduction to Fixed Income Mathematics	3
MATH 4320. Introduction to Stochastic Processes	3
Math Elective (4000-level) [15]	3
NSM Capstone [16]	3
Total	**12**

Spring Semester	Hours
MATH 4380. A Mathematical Introduction to Options	3
MATH 4389: Survey of Undergraduate Mathematics	3
NSM Capstone [16]	3
Elective [13]	3
Total	**12**

59 of 87

Suggested Program - Bachelors of Science in Mathematics- Option in Mathematical Finance

First Year

Fall Semester	Hours
MATH 1431. Calculus I	4
ENGL 1303. Freshman Composition I	3
HIST 1377. The United States to 1877	3
POLS 1336. U.S. and Texas Constitutions and Politics	3
Natural Science with lab (Must be approved for minors in the discipline. Students must have two labs in the same subject.)	4
Total	**17**

Spring Semester	Hours
MATH 1432. Calculus II	4

60 of 87

ENGL 1304. Freshman Composition II	3
HIST 1378. The United States Since 1877	3
POLS 1337. U.S. Government: Congress, President, and Courts	3
Natural Science with lab (Must be approved for minors in the discipline. Students must have two labs in the same subject.)	4
Total	**17**

Second Year

Fall Semester	**Hours**
MATH 2331. Linear Algebra	3
MATH 2433. Calculus III	4
ACCT 2331. Accounting Principles I - Financial	3
ECON 3332. Intermediate Microeconomic Theory	3
Natural Science (Must be approved for majors in the discipline.)	3
Total	**16**

Spring Semester	**Hours**
MATH 3330. Abstract Algebra	3
MATH 3331. Differential Equations	3
ACCT 2332. Accounting Principles II - Managerial	3
ECON 3334. Intermediate Macroeconomic Theory	3
Natural Science (Must be approved for majors in the discipline.)	3
Total	**15**

Third Year

Fall Semester	**Hours**
MATH 3333. Intermediate Analysis	3
MATH 3338. Probability	3
MATH 3363. Introduction to Partial Differential Equations	3

ce 1 of 87

COSC 1410. Introduction to Computer Science I	4
Humanities Core	3
Total	**16**

Spring Semester	**Hours**
MATH 3339. Statistics	3
MATH 3364. Introduction to Complex Analysis	3
COSC 1320. Introduction to Computer Science II	3
Visual and Performing Arts Core	3
Elective	3
Total	**15**

Fourth Year

Fall Semester	**Hours**
MATH 3340. Introduction to Fixed Income Mathematics	3
MATH 4320. Introduction to Stochastic Processes	3
MATH Elective at the 4000-level (Students must complete at least 12 hours of 4000-level MATH courses, which must include MATH 4389 and 6 hours approved as a Senior sequence.)	3
NSM Capstone (The NSM Capstone requirement may be met by completing a minor in another discipline, completing a Senior Honors Theses, completing MATH 3396; 4396: Senior Research Project, or by completing MATH 3396 and 4389. Students in the Finance Option are strongly encourages to take a minor in Finance or Economics)	3
Total	**12**

Spring Semester	**Hours**
MATH 4380. A Mathematical Introduction to Options	3
MATH 4389. Survey of Undergraduate Mathematics	3

62 of 87

NSM Capstone (The NSM Capstone requirement may be met by completing a minor in another discipline, completing a Senior Honors Theses, completing MATH 3396; 4396: Senior Research Project, or by completing MATH 3396 and 4389. Students in the Finance Option are strongly encourages to take a minor in Finance or Economics)	3
Elective	3
Total	**12**

63887

PHYS

Suggested Program - Bachelor of Arts in Physics

First and Second Years

See the Bachelor of Science in Physics Suggested Program.

Third Year

Fall Semester	Hours
Mathematics Elective (3000- or 4000-level)	3
PHYS 3110. Advanced Laboratory Analysis	1
PHYS 3113. Advanced Laboratory I	1
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Humanities Core Course	3
Free Electives [17]	3
Total	**14**

Spring Semester	Hours
Mathematics Elective (3000- or 4000-level)	3
Physics Electives (3000- or 4000-level)	7
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Visual/Performing Arts Core Course	3
Total	**16**

Fourth Year

Fall Semester	**Hours**
Physics Elective (3000- or 4000-level)	7
NSM Capstone or Minor	3
Free Electives 17	6
Total	**16**

Spring Semester	**Hours**
Physics Elective (3000- or 4000-level)	7
NSM Capstone or Minor	3
Free Elective 17	6
Total	**16**

Suggested Program - Bachelor of Science in Physics

First Year

47 of 87

Fall Semester	Hours
ENGL 1303. Freshman Composition I [1]	3
CHEM 1331 and 1111. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
PHYS 1110. Introductory Physics Seminar	1
MATH 1431. Calculus I	4
Social Sciences Core Course	3
Total	~~15~~ 14

Spring Semester	Hours
ENGL 1304. Freshman Composition II [1]	3
CHEM 1332 and 1112. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
MATH 1432. Calculus II	4
PHYS 1321. University Physics I	3
PHYS 1121. Physics Laboratory I	1
Total	**15**

Second Year

Fall Semester	Hours
MATH 2331. Linear Algebra	3
MATH 2433. Calculus III	4
PHYS 1322 and 1122. University Physics II and Physics Laboratory II	4
HIST 1377. The United States to 1877 or equivalent	3
Total	**14**

Spring Semester	Hours
MATH 3331. Differential Equations	3
PHYS 3315. Modern Physics I	3
Natural Science Approved Course	3
HIST 1378. The United States Since 1877 or equivalent	3
Writing in the Discipline Core Course	3
Total	**15**

68 of 87

Third Year

Fall Semester	Hours
MATH 3335. Vector Analysis	3
PHYS 3110. Advanced Laboratory Analysis	1
PHYS 3113. Advanced Laboratory I	1
PHYS 3316. Modern Physics II	3
PHYS 3309. Intermediate Mechanics	3
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Visual/Performing Arts Core Course	3
Total	**17**

Spring Semester	Hours
MATH 3363. Introduction to Partial Differential Equations	3
PHYS 3114. Advanced Laboratory II	1
PHYS 3327. Thermal Physics	3
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Free Elective, Minor Course	3
Humanities Core Course	3
Total	**16**

Fourth Year

Fall Semester	Hours
PHYS 4321. Intermediate Electromagnetic Theory I	3
PHYS 3312 and PHYS 3112 or PHYS 4421. Modern Optics and Modern Optics Laboratory or Electronics Devices and Their Applications	4
NSM Capstone Course or Minor or Free Electives	6
Natural Science Approved Course	3
Total	**16**

Spring Semester	Hours

PHYS 4322. Intermediate Electromagnetic Theory II	3
Physics Elective (3000- or 4000-level)	3
NSM Capstone Course or Minor or Free Elective	7
Total	**13**

70 of 87

All students are responsible for the completion of 36 advanced semester hours required for a University of Houston degree.

Suggested Program - Bachelor of Science in Physics (Geophysics Specialization)

First and Second Years

See the Bachelor of Science in Physics Suggested Program.

Third Year

Fall Semester	Hours
MATH 3335. Vector Analysis	3
PHYS 3110. Advanced Laboratory Analysis	1
PHYS 3113. Advanced Laboratory I	1
PHYS 3316. Modern Physics II	3
PHYS 3309. Intermediate Mechanics	3
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
GEOL 4330. Introduction to Geophysics	3
Total	**17**

Spring Semester	Hours
MATH 3363. Introduction to Partial Differential Equations	3
PHYS 3114. Advanced Laboratory II	1
PHYS 3327. Thermal Physics	3
POLS 1337. U.S. Government: Congress, President and Courts or equivalent	3
Geology Approved Elective	3
Humanities Core Course	3
Total	16

Fourth Year

71 of 87

Fall Semester	Hours
Geology Approved Electives	6
PHYS 4321. Intermediate Electromagnetic Theory I	3
PHYS 3312 and PHYS 3112 or PHYS 4421. Modern Optics and Modern Optics Laboratory or Electronic Devices and Their Applications	4
NSM Capstone, Minor, Elective	3
Total	**16**

Spring Semester	Hours
PHYS 4322. Intermediate Electromagnetic Theory II	3
Geology Approved Elective	3
Visual/Performing Arts Core Course	3
NSM Capstone, Minor, Elective	4
Total	**13**

72 of 87

ENVS

73 of 87

B.S. in Environmental Science and Program in Environmental Systems and Modeling Suggested Program Plan for Atmospheric Science Option (3b)

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I	3
CHEM 1331 and 1111. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
BIOL 1361 and 1161. Introduction to Biological Science and Laboratory	4
MATH 1431. Calculus I	4
Total	**15**

Spring Semester	Hours
ENGL 1304. Freshman Composition II	3
CHEM 1332 and 1112. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
BIOL 1362 and 1162. Introduction to Biological Science and Laboratory	4
MATH 1432. Calculus II	4
Total	**15**

Second Year

Fall Semester	Hours
GEOL 1350. Introduction to Meteorology	3
HIST 1377. The United States to 1877 or equivalent	3

74 of 87

MATH 2331. Linear Algebra	3
Social and Behavioral Science Core	3
Humanities Core	3
Total	**15**

Spring Semester	**Hours**
GEOL 1330 and 1130. Physical Geology and Laboratory **or** GEOL 1340. Introduction to Earth Systems	3-4
COSC 1410. Introduction to Computer Science	4
PHYS 1321 and 1121. University Physics I and Laboratory	4
HIST 1378. The United States Since 1877 or equivalent	3
Total	14-15

Third Year

Fall Semester	**Hours**
MATH 2433. Calculus III	4
PHYS 1322 and 1112. University Physics II and Laboratory	4
Group 1 elective	3
Group 2 elective (selected from Option 3b)	3
Elective	3 1
Total	17 15

Spring Semester	**Hours**
Group 1 electives	6
Group 2 elective (selected from Option 3b)	3
Visual and Performing Arts Core Course	3
Writing in the Discipline Core Course	3
Total	**15**

75 of 87

Fourth Year

Fall Semester	Hours
Group 1 elective	3
Group 2 elective (selected from Option 3b)	3
ENVS electives	6
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Total	**15**

Spring Semester	Hours
Group 2 elective (selected from Option 13b)	3
ENVS electives	6
NSM Capstone Course	3 4 e
POLS 1337. US Government: Congress, President, and Courts or equivalent	3
Total	**15 16 e**

B.S. in Environmental Science and Program in Environmental Systems and Modeling Suggested Program Plan for Environmental Geology Option (3a)

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I	3
CHEM 1331 and 1111. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
BIOL 1361 and 1161. Introduction to Biological Science and Laboratory	4
MATH 1431. Calculus I	4
Total	**15**

Spring Semester	Hours
ENGL 1304. Freshman Composition II	3
CHEM 1332 and 1112. Fundamentals of Chemistry and Fundamentals of Chemistry	4

77 of 87

Laboratory	
BIOL 1362 and 1162. Introduction to Biological Science and Laboratory	4
MATH 1432. Calculus II	4
Total	**15**

Second Year

Fall Semester	**Hours**
GEOL 1350. Introduction to Meteorology **or** GEOL 1302. Global Climate Change	3
HIST 1377. The United States to 1877 or equivalent	3
MATH 2331. Linear Algebra	3
Social and Behavioral Science Core	3
Humanities Core	3
Total	**15**

Spring Semester	**Hours**
GEOL 1330 and 1130. Physical Geology and Laboratory	4
COSC 1410. Introduction to Computer Science	4
PHYS 1321 and 1121. University Physics I and Laboratory	4
HIST 1378. The United States Since 1877 or equivalent	3
Total	**15**

Third Year

Fall Semester	**Hours**
MATH 2433. Calculus III	4

78 of 87

PHYS 1322 and 1112. University Physics II and Laboratory	4
Group 1 elective	3
Group 2 elective (selected from Option 3a)	3
Elective	81
Total	~~17~~ 15

Spring Semester	**Hours**
Group 1 electives	6
Group 2 elective (selected from Option 3a)	3
Visual and Performing Arts Core Course	3
Writing in the Discipline Core Course	3
Total	**15**

Fourth Year

Fall Semester	**Hours**
Group 1 elective	3
Group 2 elective (selected from Option 3a)	3
ENVS electives	6
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3
Total	**15**

Spring Semester	**Hours**
Group 2 elective (selected from Option 3a)	3
ENVS electives	6
NSM Capstone Course	3
POLS 1337. US Government: Congress, President, and Courts or equivalent	3
Total	**15**

B.S. in Environmental Science and Program in Environmental Systems and Modeling Suggested Program Plan for Environmental Chemistry Option (1) or Environmental Modeling Option (2)

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I	3
CHEM 1331 and 1111. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
BIOL 1361 and 1161. Introduction to Biological Science and Laboratory	4

80 of 87

MATH 1431. Calculus I	4
Total	**15**

Spring Semester	**Hours**
ENGL 1304. Freshman Composition II	3
CHEM 1332 and 1112. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
BIOL 1362 and 1162. Introduction to Biological Science and Laboratory	4
MATH 1432. Calculus II	4
Total	**15**

Second Year

Fall Semester	**Hours**
GEOL 1350. Introduction to Meteorology **or** GEOL 1302. Global Climate Change	3
HIST 1377. The United States to 1877 or equivalent	3
MATH 2331. Linear Algebra	3
Social and Behavioral Science Core	3
Humanities Core	3
Total	**15**

Spring Semester	**Hours**
GEOL 1330 and 1130. Physical Geology and Laboratory **or** GEOL 1340. Introduction to Earth Systems	3-4
COSC 1410. Introduction to Computer Science	4
PHYS 1321 and 1121. University Physics I and Laboratory	4

81 of 87

HIST 1378. The United States Since 1877 or equivalent	3
Total	14-15

Third Year

Fall Semester	**Hours**
MATH 2433. Calculus III	4
PHYS 1322 and 1112. University Physics II and Laboratory	4
Group 1 elective	3
Group 2 elective (selected from Option 1 or Option 2)	3
Elective	1
Total	15

Spring Semester	**Hours**
Group 1 electives	6
Group 2 elective (selected from Option 1 or Option 2)	3
Visual and Performing Arts Core Course	3
Writing in the Discipline Core Course	3
Total	**15**

Fourth Year

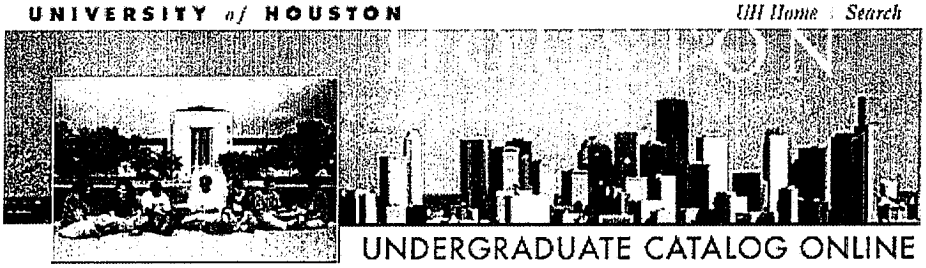
Fall Semester	**Hours**
Group 1 elective	3
Group 2 elective (selected from Option 1 or Option 2)	3
ENVS electives	6
POLS 1336. U.S. and Texas Constitutions and Politics or equivalent	3

TOTAL 15

Spring Semester	**Hours**
Group 2 elective (selected from Option 1 or Option 2)	3
ENVS electives	6
NSM Capstone Course	3
POLS 1337. US Government: Congress, President, and Courts or equivalent	3
Total	**15**

COLLEGE CHANGES.

84 of 87



Catalog Home

Catalog Search

Colleges

- Architecture
- Business
- Education
- Engineering
- Honors
- Hotel & Restaurant Management
- Law
- Liberal Arts & Social Sciences
- Natural Sciences & Mathematics
- Optometry
- Pharmacy
- Social Work
- Technology

Undergraduate Scholars at UH
- Academic Advising Center
- College Success Program

Catalog Archives

Fall 2008 - Summer 2009

College of Natural Sciences and Mathematics

General NSM Degree Information

Baccalaureate Degrees

The college offers the Bachelor of Science degree in all departments and the Bachelor of Arts degree in biochemical and biophysical sciences, biology, chemistry, earth science, mathematics, and physics. Students interested in teaching biology, chemistry, earth science, mathematics, or physics at the secondary level should contact the Office of the Dean for advisement.

Requirements for a Baccalaureate Degree

The following requirements must be met by students who

85 of 87

expect to earn a Bachelor of Arts or a Bachelor of Science degree with a major in the College of Natural Sciences and Mathematics. Students will also be required to meet special requirements listed in the Academic Regulations and Degree Requirements section of this catalog

1. Completion of a minimum of 120 semester hours. At least 36 of the 120 semester hours are to be advanced according to the respective degree plans. Any change or substitution must have the College Dean's written approval. Students must earn a 2.00 minimum cumulative grade point average in all courses attempted at the university.

2. Completion of the core curriculum requirements.

Core Curriculum Requirements	Hours
ENGL 1303, 1304. Freshman Composition I, II	6
MATH 1310. College Algebra	3
Three hours in approved math, logic, statistics, computer science, or music theory courses	3
Approved courses in Natural Sciences	6
Approved courses in Social and Behavioral Sciences	3
Approved courses in Writing in the Discipline	3
Approved courses in Humanities	3
Approved courses in Visual/Performing Arts	3
American History: HIST 1377 and 1378 or equivalent	6
American Government: POLS 1336 and 1337 or equivalent	6

3. Completion of college degree requirements (B.A. or B.S.) to include a major (29 to 50 semester credit hours of which at least 18 must be advanced) and NSM Capstone course work (at least 6 advanced hours)

    - Of all courses attempted in the major (including both required and "elective" courses in the major), no more than six semester hours with grades below **C-**. Students exceeding that limit must

86 of 87

GEOL 3338	Environmental Hydrogeology
GEOL 3340	Geologic Field Methods
GEOL 3370	Mineralogy
GEOL 3383	Remote Sensing
GEOL 4331	Introduction to Geographic Information Systems
GEOL 4366	Groundwater Modeling
Upper division	Approved elective

Option 3b: Atmospheric Sciences (12 hours):

GEOL 3380	Physical Meteorology
GEOL 3381	Micrometeorology
GEOL 3382	Atmospheric Chemistry
GEOL 3383	Remote Sensing
GEOL 4333	Mesoscale Meteorology
GEOL 4341	Dynamic Meteorology
Upper division	Approved elective

Other Core requirements, excluding capstone (30 hours):

Electives, including course(s) required for capstone (9-10 hours):

TOTAL (minimum number of hours): 120

The Bachelor of Science degree requires completion of a minimum of 120 hours, at least 36 of which are to be advanced hours. Students must earn a minimum 2.0 cumulative GPA in all courses attempted at the university. In addition, students must earn a minimum 2.00 cumulative GPA in all courses in the major and in Core courses attempted at the university. Students must have no more than 6 semester hours with grades below **C-** in all courses attempted in the major, which includes all the ENVS Electives and Group 2 Electives. Any student exceeding that limit must retake sufficient courses and obtain

87 of 87

acceptable grades so that they do no exceed the two-course limit.

Capstone Requirement

All students in NSM must complete the Capstone requirement. Students may satisfy the Capstone in a number of ways, e.g. by completing an approved minor, a double major, a senior research project, a senior honors thesis, 6 hours of NSM-designated interdisciplinary capstone courses (e.g. GEOL 3355-3360), or 9 hours selected from an approved list (see current catalogue for details).

Departmental Requirements

No geoscience course with a grade below **C-** can be used as a prerequisite for a more advanced geoscience course.

Students with more than 6 hours in geoscience courses with grades below **C-** are not allowed to enroll in subsequent geoscience courses without written permission from the undergraduate advisor.

Note that all undergraduate majors should meet with the Faculty Advisor prior to enrollment (registration) each semester.

B.S. in Environmental Science and Program in Environmental Systems and Modeling Suggested Program Plan for Environmental Chemistry Option (1) or Environmental Modeling Option (2)

First Year

Fall Semester	Hours
ENGL 1303. Freshman Composition I	3
CHEM 1331 and 1111. Fundamentals of Chemistry and Fundamentals of Chemistry Laboratory	4
BIOL 1361 and 1161. Introduction to Biological Science and Laboratory	4