

SENIOR YEAR

| Fall | sem. hrs. | Spring | sem. hrs. |
|--------------------------------------|------------------|-----------------------------------|------------------|
| CSI 3374-Software Project Management | 3 | CSI 43C9-Capstone Design Project | 3 |
| CSI 3439-Computer Architecture | 4 | Technical Elective | 3 |
| CSS 3308-Technical Speaking | 3 | CSI 4330-Foundations of Computing | 3 |
| CSI 4337-Operating Systems | 3 | ECO 3308-Engineering Eco Analysis | 3 |
| Science Elective | <u>3(4)</u> | Science Elective | <u>3(4)</u> |
| | 16(17) | | 15(16) |

Science Elective: One of the following groups: (1) Biology 1305, 1306, 1105, 1106, (2) Chemistry 1301, 1302, (3) Geology 1405, 1406, (4) physics courses that follows the two required courses.

Technical Elective: One of the following: STA anything above 3381; PHY - anything with 1430 as a prerequisite; MTH 2321, 3312, 3370, 3374 or any 4000-level course; CSI - any upper-level course not required for software engineering track, EGR 4330, 4353, 4438.

NOTE: Must have thirty-six hours of advanced work ("3000" - "4000" courses) and a minimum of 124 hours.

BACHELOR OF SCIENCE IN INFORMATICS (B.S.I.)**B.S.I. DEGREE REQUIREMENTS (Bioinformatics Major)**

Minimum 124 semester hours to include the following:

- I. Humanities and Social Science 30-38 sem. hrs.
 - A. ENG 1302 and 3300.6 hrs.
 - B. GTX 2301 and 2302.6 hrs.
 - C. REL 1310 and 1350.6 hrs.
 - D. Foreign Language (one language through 2310 or equivalent). 3-11 hrs.
 - E. History and/or social science.6 hrs.
 - F. ENG 2301 or PSC 2302.3 hrs.
- II. Computer Science and Biology61 hrs.
 - A. CSI 1430, 1440, 2334, 2350, 3334, 3335, 3336, 3344, 3471, (3372 or 4337) . . .33 hrs.
 - B. BIO 1305-1105, 1306-1106, 2306-2106, 4306-410616 hrs.
 - C. Four hours of Biology from the following courses: BIO 3330, 3422, 4100, 4107, 4108, 4307, 4308, 4341, 4401.4 hrs.
 - D. A grade of "C" or better in all but four hours maximum of the computer science hours counted toward the major.
- III. Bioinformatics12 hrs.
 - A. BINF 3350, 3360, 43609 hrs.
 - BINF 3396 (Summer Intern Experience) or CSI elective (see note).3 hrs.
- IV. Mathematics and Chemistry23 hrs.
 - A. MTH 13213 hrs.
 - B. One course from STA 2381 or 33813 hrs.
 - C. CHE 1301, 1302, 1316, 3238, 3331, and 333217 hrs.
- IV. Other Requirements2 hrs.
 - A. Human Performance, two activity courses minimum2 hrs.
 - B. Chapel-two semestersno credit
 - V. The requirements for a minor, advanced work, and maximum credit are the same as for the Bachelor of Science in Computer Science degree.

Note: The following courses are not applicable to the major in bioinformatics or as degree electives without written permission from the Computer Science Department Chair: CSI 3303, 4320; MIS 1305, 3150, 3301 and 3325. ENG 1304 will not substitute for ENG 3300.

**SAMPLE SCHEDULE
BACHELOR OF SCIENCE IN INFORMATICS (B.S.I.)
BIOINFORMATICS MAJOR**

FRESHMAN YEAR

| Fall | sem. hrs. | Spring | sem. hrs. |
|---------------------------------|------------------|--|------------------|
| CSI 1430-Intro. to Comp. Sci. I | 4 | CSI 1440-Intro. to Comp. Sci. II | 4 |
| BIO 1305-1105-Bioscience I | 4 | BIO 1306-1106-Bioscience II | 4 |
| ENG 1302-Thinking and Writing | 3 | CSI 2350-Discrete Structures | 3 |
| REL 1310-Christian Scriptures | 3 | REL 1350-The Christian Heritage | 3 |
| Human Performance | 1 | GTX 2301-Intellectual Trad. Ancient Wrld | 3 |
| Chapel | <u>0</u> | Chapel | <u>0</u> |
| | 15 | | 17 |

SOPHOMORE YEAR

| Fall | sem. hrs. | Spring | sem. hrs. |
|-----------------------------|------------------|---|------------------|
| CSI 3334-Data Structures | 3 | CSI 3344-Intro. to Algorithms | 3 |
| BIO 2306-2106-Genetics | 4 | CSI 3471-Software Engineering I | 3 |
| CHE 1301-Modern Chemistry I | 3 | CHE 1302-Basic Principles of Modern Chemistry II | 3 |
| MTH 1321-Calculus I | 3 | CHE 1316-Lab Meas. and Techniques | 3 |
| Foreign Language | <u>3(4)</u> | Foreign Language | <u>3(4)</u> |
| | 16(17) | | 15(16) |

JUNIOR YEAR

| Fall | sem. hrs. | Spring | sem. hrs. |
|---|------------------|-------------------------------------|------------------|
| CSI 3335-Database Design & Applications | 3 | STA 2381 or STA 3381 | 3 |
| BIO 4306-4106-Molecular Genetics | 4 | BINF 3350-Genomics & Bioinformatics | 3 |
| CHE 3331-Organic Chemistry I | 3 | CSI 3336-Systems Programming | 3 |
| CSI 2334-Intro. to Computer Systems | 3 | CHE 3332-Organic Chemistry II | 3 |
| Foreign Language | <u>3</u> | Human Performance | <u>1</u> |
| | 16 | | 13 |

| Summer | sem. hrs. |
|------------------------------------|------------------|
| BINF 3396-Summer Intern Experience | <u>3</u> |
| | 3 |

SENIOR YEAR

| Fall | sem. hrs. | Spring | sem. hrs. |
|---|------------------|---|------------------|
| CSI 3372-Software Engineering II or CSI 4337-Intro. to Operating Systems | 3 | BINF 4360-Bioinformatics Database Design | 3 |
| CHE 3238-Organic Chemistry Lab | 2 | GTX 2302-Medieval Intellectual Trad. | 3 |
| BINF 3360-Intro. to Computational Biology | 3 | Biology Elective | 4 |
| ENG 2301-British Literature or PSC 2302-American Constitutional Dev. | 3 | History/Social Science Elective | 3 |
| History/Social Science Elective | <u>3</u> | ENG 3300-Tech. and Prof. Writing | <u>3</u> |
| | 14 | | 16 |

NOTE: Pre-med majors also need one year of physics prior to taking the MCAT in the spring semester of the junior year.

Biology Electives: BIO 3330-Human Genetics, 3422-Human Physiology, 4100-Genetic Seminar, 4107-Cell Physiology Lab, 4108-Cell & Dev. Biology Lab, 4307-Cell Physiology, 4308-Cell & Dev. Biology, 4341-General Biochemistry, 4401-General Bacteriology

