

**Bioinformatics Option**  
(For students entering in Fall 2011)

<b>Freshman Year/Fall Semester</b>		<b>Cr.</b>	<b>Freshman Year/Spring Semester</b>		<b>Cr.</b>
___81.111	Principles of Biology I	3	___81.112	Principles of Biology II	3
___81.117	Experimental Biology I	1	___81.118	Experimental Biology II	1
___84.116	Freshmen Seminar	1	___84.122	Chemistry II	3
___84.121	Chemistry I	3	___84.124	Chemistry II Lab	1
___84.123	Chemistry I Lab	1	___92.131	Calculus I	4
___42.101`	College Writing I	3	___42.102	College Writing II	<u>3</u>
___ . . .	(Gen. Ed.) Social Science*	<u>3</u>			<b>15</b>
		<b>15</b>			
<b>Sophomore Year/Fall Semester</b>		<b>Cr.</b>	<b>Sophomore Year/Spring Semester</b>		<b>Cr.</b>
___81.325	Genetics	3	___81.252	Physiology	3
___81.327	Problems in Genetics	1	___84.222	Organic Chemistry II-A	3
___84.221	Organic Chemistry I-A	3	___84.230	Organic Chemistry II-A Lab	1
___84.229	Organic Chemistry I-A Lab	1	___91.102	Computing II	4
___92.132	Calculus II	4	___ . . .	(Gen Ed) Arts/Humanities*	<u>3</u>
___91.101	Computing I	<u>4</u>			<b>14</b>
		<b>16</b>			
<b>Junior Year/Fall Semester</b>		<b>Cr.</b>	<b>Junior Year/Spring Semester</b>		<b>Cr.</b>
___45.401	Bioethics Genetics Res.**	3	___81.405	Bioinformatics	3
___81.419	Biochemistry	3	___81.407	Bioinformatics Lab	1
___81.421	Techniques of Biochemistry	2	___92. . .	Statistics Elective	3
___91.201	Computing III	4	___92.321	Discrete Structures I	3
___81. 3/400	Biology Elective***	<u>3-4</u>	___81.426	Evolutionary Biology	<u>3</u>
		<b>15-16</b>			<b>13</b>
<b>Senior Year/Fall Semester</b>		<b>Cr.</b>	<b>Senior Year/Spring Semester</b>		<b>Cr.</b>
___81.451	Senior Seminar	2	___95.104/144	Physics II	3
___91. . .	Computing Elective	3-4	___96.104/144	Physics Lab II	1
___95.103/141	Gen. Physics I	3	___81.412	Senior Research <b>OR</b>	
___96.103/141	Gen. Physics Lab I	1	___81. . .	Biology Elective***	3-4
___81.411	Senior Research <b>OR</b>		___ . . .	(Gen Ed.) Social Science*	3
___81.3/400	Biology Elective***	3-4	___ . . .	(Gen Ed) Arts/Humanities*	<u>3</u>
___ . . .	(Gen Ed.) Social Science*	<u>3</u>			<b>13-14</b>
		<b>15-17</b>			

**Minimum Total Credits = 120**

\*The General Education Electives for SS and AH may be taken in any order. Consult the *Schedule of Classes* booklet regarding General Education (Gen. Ed.) requirements. One Ethics course (E) and one Diversity course (D) need to be included among the total of six AH and SS courses.

\*\*Replaces one Arts/Humanities (ethics) general education course

\*\*\*Two of the 3 Biology electives must have a laboratory component (minimum 1 credit). Courses at the 500 level may also be taken with permission.

*College of Arts & Sciences:*

***Bachelor of Science in Biological Sciences***  
***BIOINFORMATICS OPTION***

**Electives:**

Students in the Bioinformatics Option may choose any of the 300, 400, or 500 level courses (with permission) that have an “81” prefix. However, for students specifically interested in BIOTECHNOLOGY or BIOMEDICAL Applications of Bioinformatics, the following electives are considered especially suitable:

*300-400 Level:*

1. Molecular Biology (81.467 & 81.469)
2. Cell Culture (81.476)
3. Immunology (81.493 & 81.495)

*500 Level (with permission)*

1. Developmental Biology (81.580)
2. Isolation and Purification of Biotech Products (10.545)
3. Principles of Cell and Microbe Cultivation (10.555)
4. Biopharmaceutical GMP and Licensing (10.555)
5. Biotechnology Processing Projects Laboratory (10. 586)

*Designated Bioinformatics Computing Electives:*

1. Analysis of Algorithms (91.404)
2. Databases I (91.309)
3. Computing IV (91.204)