

### Sample Program --- B.S. in Biology/Education with Secondary Teaching Certification

<b>FRESHMAN</b>		Units		Units		Units	
<b>Fall</b>			<b>Winter</b>			<b>Spring</b>	
Bio. Sci. 93	4		Bio. Sci. 94	4	Chemistry 1C, LC	6	
Chemistry 1A	4		Chemistry 1B	4	Writing/Gen. Ed.	4	
Writing 39A/39B	4		Writing 39B/C	4	Math 2A	4	
Bio Sci 14: Intro to Sci/Math Teaching	3						
	<b>15</b>			<b>12</b>			<b>14</b>
<b>SOPHOMORE</b>							
<b>Fall</b>			<b>Winter</b>			<b>Spring</b>	
Bio 97	4		Bio 98	4	Bio 99	4	
Chemistry 51A	4		Chem 51B, 51LB	6	Math 2B	4	
Bio Sci 101: Middle School Sci/Math Teaching	3		Bio Sci 108: Research Methods	4	History 60/LPS 60: Making of Modern Science (IV)**	4	
Chem 1LD	2						
	<b>13</b>			<b>14</b>			<b>12</b>
<b>JUNIOR</b>							
<b>Fall</b>			<b>Winter</b>			<b>Spring</b>	
Bio. Required Major course	4		Bio. Required Major Course	4	Bio. Required Major Course	4	
Physics 3A	4		Physics 3B, 3LB	5.5	Physics 3C, 3LC	5.5	
Educ 55: Know & Learn Sci/Math (III)	5		Educ 143AW-Classroom Interactions I	4	Educ 148: Complex Pedagogical Design	6	
Statistics 8	4		General Ed.	4			
	<b>17</b>			<b>17.5</b>			<b>15.5</b>
<b>SENIOR</b>							
<b>Fall</b>			<b>Winter</b>			<b>Spring</b>	
U. D. Bio Elective	4		U. D. Bio Elective	4	Bio. Sci. U.D. Lab	4	
Bio. Sci. U.D. Lab	4		Educ 109- Read & Writing in Sec. Classroom	4	General Ed.	4	
Educ 143BW-Classroom Interactions II (I-UDW/VII)	4		Educ 158-Student Teaching in Math & Science	6	Education 158- Student Teaching in Math & Science	6	
General Ed.	4		General Ed.	4			
	<b>16</b>			<b>18</b>			<b>14</b>

#### School Requirements

Biological Sciences 2A, 194S; Biological Sciences Core 93, 94, 97, 98, 99, 100; Chemistry 1A-B-C, 1LC-LD or H2A-B-C, H2LA-LB-LC; Chemistry 51A-B-C, 51LB-LC or H52A-B-C, H52LA-LB; Mathematics 2A-B and one course selected from Statistics 7, 8, Mathematics 2D, or 3A; Physics 3A-B-C, 3LB-LC or 7C-D-E, 7LC-LD.

#### Major Requirements

A. *Required Major Courses*: Three courses selected from Biological Sciences D103, D104, D105, E106, E109, N110.

B. *Upper-Division Laboratories*: Two laboratories required. At least two selected from Biological Sciences D111L, E106L, E112L, E115L, E131L, E161L, E166, E172L, E179L, M114L, M116L, M118L, M121L, M122L, M124L, M127L, M130L, N113L; one laboratory can be satisfied with completion of Excellence in Research in the Biological Sciences.

C. *Upper-Division Biology Electives*: Two upper-division, four-unit courses selected from Biological Sciences D103-D190, E106-E190, M114-M190, N110-N190, Pharmaceutical Sciences 170A, 170B, 171, 173, 174, Chemistry 177. Biological Sciences D103, D104, D105, E106, E109, N110 may not be used to satisfy more than one requirement. Chemistry 131A-B-C or Physics 147A-B can be used to partially satisfy the Upper-Division Biology Elective Requirement. Additionally, Psychology/Biological Sciences double majors may also use Psychology 112A-B-C to partially satisfy the Upper-Division Biology Elective Requirement.

\*\* Also offered during Winter quarter

## Cal Teach Courses

- **PS 5/BS 14** Intro to Science & Math Teaching (F,W,S)-  
Fieldwork
- **PS 105/BS 101** Middle School Teaching (F,W)- Fieldwork
- **Chem 193/Physics 193/BS 108** Research Methods (W)
- **LPS 60/Hist 60** Making of Modern Science (science majors only W, S, Summer)
  
- **Math 8** (math majors only, S, summer)
  
- **ED 55** Knowing and Learning (F)
  
- **ED 143AW** Classroom Interactions I (W, ED 55 prereq)-  
Fieldwork
  
- **ED 148** Complex Pedagogical Design (S, ED 143AW  
prereq)-Fieldwork
  
- **ED 143BW** Classroom Interactions II (F, ED 148 prereq)-  
Fieldwork
  
- **ED 109** Reading & Writing in Sec. Classroom (W, ED 148  
prereq)
  
- **ED 158** Student Teaching I (W, ED 109 coreq, ED 143BW  
prereq)- Fieldwork
  
- **ED 158** Student Teaching II (S, ED 158 I prereq)- Fieldwork