

# UNDERGRADUATE CURRICULUM MINUTES

Date: 11/16/2004

Minutes Approved by: 

Date: 12/16/04

TO: Dr. Stephen A. Richters  
Provost

FROM: Dr. Jo Galle, Chair  
Undergraduate Curriculum Committee  
And  
Dr. Lon Smith, Vice-Chair  
Undergraduate Curriculum Committee

FACULTY MEMBERS PRESENT: J. Galle, L. Smith, C. Michaelides, R. Hanser, P. Sanders, P. Meredith, A. Kelly, J. Wood

FACULTY MEMBERS ABSENT BUT EXCUSED: None

FACULTY MEMBERS ABSENT: J. Robertson (EO), E. Guerriero, D. Schween, S. Sirmans

STUDENT MEMBERS PRESENT: N/A

STUDENT MEMBERS ABSENT: N/A

## 1. THE DEPARTMENT OF CHEMISTRY requests:

Presenter: Dr. Harry Brotherton  
Action: CHANGE the degree plan for Bachelor of Science in  
**Chemistry**

New Degree Plan:

### **DEPARTMENT OF CHEMISTRY**

Brotherton, Arant, Bruscato, Cruse, G. Findley, Fox, Junk, Pugh, Taylor, Watkins, Watson

All B.S. Chemistry majors must take six hours of a foreign language and forty-nine hours of core courses. The core must include the following thirty-three hours of chemistry courses: Chemistry 107, 108, 109, 110, 301, 230, 231, 232, 233, 240, 241, 310, 350, 431, and 407.

Chemistry majors may choose the American Chemical Society Certified Concentration or the Non-ACS-Certified Concentration.

**American Chemical Society Certified Concentration.** To complete the 49-hour core, American

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Chemical Society Certified Degree candidates must take Chemistry 320, 321, 322, 323, 413, and 499. Additional requirements include Mathematics 113, 131, 132, and 232; Physics 207, 208, 209, and 210.

**Non-ACS-Certified Concentration.** To complete the 49-hour core, Non-ACS-certified majors must take Chemistry 220, 499 and eight hours of specialty elective courses. Additional requirements for the Non-ACS-Certified Degree include Mathematics 113 and 114; Physics 203, 204, 209, and 210; and twenty hours of free electives. Of the total twenty-eight hours of elective courses (8 specialty electives and 20 free electives), at least fifteen hours must be numbered 300 or above.

## CHEMISTRY

Note: On any line below, if ACS-Certified Concentration and Non-ACS-Certified courses differ, the Non-ACS Certified courses are listed in brackets { }.

### Freshman Year Hrs.

Chemistry 107 <sup>cnp</sup> , 109; 108 <sup>cnp</sup> , 110 .....	8
Core English Composition* .....	6
Mathematics 113, 131 or {Mathematics 113, 114} <sup>cm</sup> .....	7 {6}
Core Social Science (Group 1)* .....	3
Core Natural/Physical Science (Biological Science)* .....	3
Core Humanities* .....	6
FRYS 101 .....	<u>1</u>
	33 {32}

### Sophomore Year

Chemistry 230, 231, 232, 233, 240, 241 .....	13
Mathematics 132; 232; or {Electives} .....	8
Physics 207, 208 or {203, 204} .....	6
Physics 209, 210 .....	2
Core Fine Arts* .....	<u>3</u>
	32

### Junior Year

Chemistry 301; {220}; 310; 350 .....	8 {11}
Chemistry 320, 321, 322, 323 or {Specialty Electives} .....	8
Computer Science Elective .....	3
Core Humanities* .....	3
Foreign Language .....	3
Core Social Science (Group 2)* .....	<u>3</u>
	28 {31}

### Senior Year

Chemistry 431, 407, 499 .....	9
Chemistry 413 or {Elective} .....	3

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Electives .....	11 {9}
Kinesiology Activities.....	2
Foreign Language (Same Language) .....	3
University Capstone 300 <sup>uc</sup> .....	<u>3</u>
	31 {29}

Total hours for degree, 124.

\*Students should see Arts and Sciences Core Curriculum requirements on page 88.

Level: Undergraduate  
 Beginning Term: 054

**APPROVED**

**2. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
 Action: ADD new course CHEM 352 “Biochemistry II” to the undergraduate catalog.  
 Thermodynamics, metabolism, photosynthesis, protein and nucleic acid biosynthesis. Three hours lecture. Prerequisite: “C” or better in CHEM 350.  
 Sp

Credit hours: 3  
 Level: Undergraduate  
 Activity Type: LEC  
 Maximum Hours To Be Earned: 3  
 Cross-Listed:  
 Beginning Term: 061  
 Offered  
 Fixed/Variable: Fixed  
 Variable Range:  
 Abbreviated Course  
 Title:

**APPROVED**

**3. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
 Action: ADD new course CHEM 351 “Biochemistry Laboratory I” to

**UNDERGRADUATE CURRICULUM MINUTES**

the undergraduate catalog.

Laboratory to accompany Biochemistry I. Introduction to procedures used in Biochemistry Laboratory. Three hours laboratory. Prerequisites: Credit or registration in CHEM 350 and "C" or better in CHEM 233. F

Credit hours: 1  
Level: Undergraduate  
Activity Type: LAB  
Maximum Hours To Be Earned: 1  
Cross-Listed:  
Beginning Term: 064  
Offered  
Fixed/Variable: Fixed  
Variable Range:  
Abbreviated Course Title: Biochemistry Lab I

**APPROVED**

**4. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 350 "Biochemistry I" to the undergraduate catalog.

Introduction to structure and function of proteins, nucleic acids, lipids and carbohydrates and enzyme kinetics, mechanisms, regulation, and vitamins. Three hours lecture.

Credit hours: 3  
Level: Undergraduate  
Activity Type: LEC  
Maximum Hours To Be Earned: 3  
Cross-Listed:  
Beginning Term: 054  
Offered  
Fixed/Variable: Fixed  
Variable Range:  
Abbreviated Course Title:

**APPROVED**

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**5. THE DEPARTMENT OF CHEMISTRY requests:**

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 323 "Physical Chemistry Laboratory II" to the undergraduate catalog.  
Modern experimental techniques of physical chemistry. Three hours laboratory. Prerequisite: "C" or better in CHEM 321; credit or registration in CHEM 322. Sp

Credit hours: 1  
Level: Undergraduate  
Activity Type: LAB  
Maximum Hours To Be Earned: 1  
Cross-Listed:  
Beginning Term: 061  
Offered Fixed  
Fixed/Variable:  
Variable Range:  
Abbreviated Course Title: Physical Chem Lab II

**APPROVED**

**6. THE DEPARTMENT OF CHEMISTRY requests:**

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 322 "Physical Chemistry II" to the undergraduate catalog.  
Continuation of Chemistry 320. Theories of atomic and molecular structure, spectroscopy and quantum mechanics are applied to chemical systems. Three hours lecture; one hour recitation. Prerequisite: "C" or better in CHEM 320. Sp

Credit hours: 3  
Level: Undergraduate  
Activity Type: LEC  
Maximum Hours To Be Earned: 3  
Cross-Listed:  
Beginning Term: 061  
Offered Fixed

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Fixed/Variable:  
Variable Range:  
Abbreviated Course Title: Physical Chem II

**APPROVED**

**7. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 321 "Physical Chemistry Laboratory I" to the undergraduate catalog.  
Modern experimental techniques in physical chemistry. Three hours laboratory. Prerequisite: "C" or better in CHEM 241 and credit or registration in CHEM 320. F  
Credit hours: 1  
Level: Undergraduate  
Activity Type: LEC  
Maximum Hours To Be Earned: 1  
Cross-Listed:  
Beginning Term: 054  
Offered: Fixed  
Fixed/Variable:  
Variable Range:  
Abbreviated Course Title: Physical Chem Lab I

**APPROVED**

**8. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 320 "Physical Chemistry I" to the undergraduate catalog.  
Fundamental interpretations of the physical principles of chemistry with emphasis on equilibrium thermodynamics and chemical kinetics. Three hours lecture; one hour recitation. Prerequisites: "C" or better in CHEM 108; PHYS 208; MATH 132. F  
Credit hours: 3

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Level: Undergraduate  
Activity Type: LEC  
Maximum Hours To Be Earned: 3  
Cross-Listed:  
Beginning Term: 054  
Offered  
Fixed/Variable: Fixed  
Variable Range:  
Abbreviated Course Title: Physical Chem I

**APPROVED**

**9. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 310 "Descriptive Inorganic Chemistry" to the undergraduate catalog.  
Discussion of elemental properties, elemental combinations into ionic and molecular compounds, and periodic trends. Laboratory synthesis and characterization of inorganic compounds. Three hours lecture; three hours laboratory. Prerequisites: "C" or better in CHEM 108. Sp (Formerly 313/314)

Credit hours: 4  
Level: Undergraduate  
Activity Type: LEC/LAB  
Maximum Hours To Be Earned: 4  
Cross-Listed:  
Beginning Term: 061  
Offered  
Fixed/Variable: Fixed  
Variable Range:  
Abbreviated Course Title: Descrip Inorg Chem

**APPROVED**

**UNDERGRADUATE CURRICULUM MINUTES**

**10. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 240 "Quantitative Analysis" to the undergraduate catalog.  
Discussion of techniques and theories of gravimetric, volumetric, and physicochemical methods of analysis. Three hours lecture. Prerequisite: "C" or better in CHEM 108. F (Formerly 307)

Credit hours: 3  
Level: Undergraduate  
Activity Type: LEC  
Maximum Hours To Be Earned: 3  
Cross-Listed:  
Beginning Term: 054  
Offered Fixed  
Fixed/Variable:  
Variable Range:  
Abbreviated Course Title: Quant Analysis

**APPROVED**

**11. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 233 "Organic Chemistry Laboratory II" to the undergraduate catalog.  
Laboratory to accompany Organic Chemistry II. Application of techniques from Organic Chemistry I to organic reactions. Three hours laboratory. Prerequisites: "C" or better in CHEM 231 and credit or registration in CHEM 232. F, Sp, Su2 (Formerly 306)

Credit hours: 1  
Level: Undergraduate  
Activity Type: LAB  
Maximum Hours To Be Earned: 1  
Cross-Listed:  
Beginning Term: 054  
Offered Fixed

**UNDERGRADUATE CURRICULUM MINUTES**



Fixed/Variable:  
Variable Range:  
Abbreviated Course Title: Organic Chem Lab II

**APPROVED**

**12. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 241 "Quantitative Analysis Laboratory" to the undergraduate catalog.  
A Laboratory course to accompany CHEM 240. Six hours laboratory.  
Prerequisite: 'C' or better in CHEM 110 and credit or registration in CHEM 240. F (Formerly 308)  
Credit hours: 2  
Level: Undergraduate  
Activity Type: LAB  
Maximum Hours To Be Earned: 2  
Cross-Listed:  
Beginning Term: 054  
Offered: Fixed  
Fixed/Variable:  
Variable Range:  
Abbreviated Course Title: Quant Analysis Lab

**APPROVED**

**13. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 232 "Organic Chemistry II" to the undergraduate catalog.  
Spectroscopic techniques and the chemistry of aromatic compounds, carbonyl compounds, and amines will be covered. Three hours lecture. Prerequisites: "C" or better in CHEM 230. F, Sp, Su2 (Formerly 304)  
Credit hours: 3  
Level: Undergraduate

**UNDERGRADUATE CURRICULUM MINUTES**

Activity Type: LEC  
Maximum Hours To Be Earned: 3  
Cross-Listed:  
Beginning Term: 054  
Offered  
Fixed/Variable: Fixed  
Variable Range:  
Abbreviated Course Title:

**APPROVED**

**14. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 231 "Organic Chemistry Laboratory I" to the undergraduate catalog.  
Laboratory to accompany Organic Chemistry I. Introduction to procedures used in Organic Laboratory. Three hours laboratory. Prerequisites: Credit or registration in CHEM 230 and "C" or better in CHEM 110. F, Sp, Su1 (Formerly 305)  
Credit hours: 1  
Level: Undergraduate  
Activity Type: LAB  
Maximum Hours To Be Earned: 1  
Cross-Listed:  
Beginning Term: 054  
Offered  
Fixed/Variable: Fixed  
Variable Range:  
Abbreviated Course Title: Organic Chem Lab I

**APPROVED**

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**15. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 230 "Organic Chemistry I" to the undergraduate catalog.  
Discussion of structure and bonding theory, acid-base chemistry, reactions of alkanes, alkenes, alkynes, alcohols, and alkyl halides. Three hours lecture.  
Prerequisite: "C" or better in CHEM 108. F, Sp, Su1 (Formerly 303)

Credit hours: 3  
Level: Undergraduate  
Activity Type: LEC  
Maximum Hours To Be Earned: 3  
Cross-Listed:  
Beginning Term: 054  
Offered Fixed  
Fixed/Variable:  
Variable Range:  
Abbreviated Course Title: Organic Chemistry I

**APPROVED**

**16. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 220 "Introduction to Physical Chemistry" to the undergraduate catalog.  
Discussion of basic chemical principles including thermodynamics, kinetics, equilibrium, and quantum mechanics, with applications to biological molecules. Three hours lecture. Prerequisites: "C" or better in CHEM 108. Sp (Formerly 302)

Credit hours: 3  
Level: Undergraduate  
Activity Type: LEC  
Maximum Hours To Be Earned: 3  
Cross-Listed:  
Beginning Term: 051  
Offered Fixed

**UNDERGRADUATE CURRICULUM MINUTES**

Fixed/Variable:  
Variable Range:  
Abbreviated Course Title: Intro Phys Chem

**APPROVED**

**17. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: ADD new course CHEM 431 "Intermediate Organic" to the undergraduate catalog.

Laboratory introduction of standard research techniques; lecture covering synthetic design, functional group transformations, advanced nomenclature, and mechanistic analysis of reactions. One hour lecture; three hours laboratory. Prerequisites: "C" or better in CHEM 232 and 233. F (Formerly 405)

Credit hours: 2  
Level: Undergraduate  
Activity Type: LEC/LAB  
Maximum Hours To Be Earned: 2  
Cross-Listed:  
Beginning Term: 064  
Offered: Fixed  
Fixed/Variable:  
Variable Range:  
Abbreviated Course Title:

**APPROVED**

**18. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: Change catalog content on pages 145, 146

Current Content:  
**CHEMISTRY**  
**(CHEM)**  
Undergraduate Requirements

**UNDERGRADUATE CURRICULUM MINUTES**

Required for an American Chemistry Society Certified Concentration: Chemistry 107, 108, 109, 110, 301, 303, 304, 305, 306, 307, 308, 313, 314, 336, 401, 402, 403, 405, 407, 413 and 499. Total of 52 core semester hours. Students who have satisfactorily completed these courses which meet the requirements of the Committee on Professional Training of the American Chemical Society may receive certification to the American Chemical Society with the approval of the Department.

Required for a Non-ACS-Certified Concentration: Chemistry 107, 108, 109, 110, 301, 302, 303, 304, 305, 306, 307, 308, 313, 314, 336, 405, 407, 499 and 9 hours of specialty elective courses. Total of 52 core semester hours.

Required for a minor: 22 hours of chemistry to include Chemistry 107, 108, 109, and 110, plus 14 semester hours of chemistry courses above the freshman level at least 3 credit hours of which must be taken at ULM.

Required for a major in Secondary Education-Chemistry: Chemistry 107, 108, 109, 110, 303, 304, 305, 306, 307, 308, 313, 314, 336, and 337. Total of 32 semester hours. (See specific degree plan in the College of Education and Human Development section).

Required for a minor in Secondary Education-Chemistry: To include Chemistry 107, 108, 109, 110, 301, 303, 305, 307, 308, and one hour of elective. Total of 19 semester hours. University English and Mathematics competency requirements apply to all degrees. Some chemistry courses will include both a lecture and a recitation component. The recitation hour will consist of review and problem solving and may also include testing.

TRANSFER OF CHEMISTRY CREDIT FROM OTHER UNIVERSITIES  
TO ULM: Chemistry course offerings at most universities are fairly standardized. To facilitate transfer from area universities, the ULM Chemistry Office maintains a list of chemistry course equivalencies.

New Content:

## **CHEMISTRY (CHEM)**

### **Undergraduate Requirements**

Required for an American Chemistry Society Certified Concentration: Chemistry 107, 108, 109, 110, 230, 231, 232, 233, 240, 241, 301, 310, 320, 321, 322, 323, 350, 431, 407, 413 and 499. Total of 49 core semester hours. Students who have satisfactorily completed these courses which meet the requirements of the Committee on

### **UNDERGRADUATE CURRICULUM MINUTES**

Professional Training of the American Chemical Society may receive certification to the American Chemical Society with the approval of the Department.

Required for a Non-ACS-Certified Concentration: Chemistry 107, 108, 109, 110, 220, 230, 231, 232, 233, 240, 241, 301, 310, 350, 431, 407, 499 and 8 hours of specialty elective courses. Total of 49 core semester hours.

Required for a minor: 22 hours of chemistry to include Chemistry 107, 108, 109, and 110, plus 14 semester hours of chemistry courses above the freshman level at least 3 credit hours of which must be taken at ULM.

Required for a major in Secondary Education-Chemistry: Chemistry 107, 108, 109, 110, 230, 231, 232, 233, 240, 241, 310, 350, and 352. Total of 31 semester hours. (See specific degree plan in the College of Education and Human Development section).

Required for a minor in Secondary Education-Chemistry: To include Chemistry 107, 108, 109, 110, 230, 231, 240, 241, 301, and one hour of elective. Total of 19 semester hours. University English and Mathematics competency requirements apply to all degrees. Some chemistry courses will include both a lecture and a recitation component. The recitation hour will consist of review and problem solving and may also include testing.

#### TRANSFER OF CHEMISTRY CREDIT FROM OTHER UNIVERSITIES

TO ULM: Chemistry course offerings at most universities are fairly standardized. To facilitate transfer from area universities, the ULM Chemistry Office maintains a list of chemistry course equivalencies.

Beginning Term: 054

### APPROVED

#### 19. THE DEPARTMENT OF CHEMISTRY requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM308 Quantitative Analysis Laboratory from Chemistry Degree and from catalog.

#### UNDERGRADUATE CURRICULUM MINUTES

Level: Undergraduate  
Beginning Term: 044

**APPROVED**

**20. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM302 Introductory Physical  
Chemistry from Chemistry and from catalog.  
Level: Undergraduate  
Beginning Term: 051

**APPROVED**

**21. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM303 Organic Chemistry I from  
Chemistry Degree and from catalog.  
Level: Undergraduate  
Beginning Term: 052

**APPROVED**

**22. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM304 Organic Chemistry II from  
Chemistry Degree and from catalog.  
Level: Undergraduate  
Beginning Term: 053

**APPROVED**

**23. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM305 Organic Chemistry  
**UNDERGRADUATE CURRICULUM MINUTES**

Level: Laboratory I from Chemistry Degree and from catalog.  
Undergraduate  
Beginning Term: 052

**APPROVED**

**24. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM306 Organic Chemistry  
Laboratory II from Chemistry Degree and from catalog.  
Level: Undergraduate  
Beginning Term: 053

**APPROVED**

**25. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM307 Quantitative Analysis  
from Chemistry and from catalog.  
Level: Undergraduate  
Beginning Term: 044

**APPROVED**

**26. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM313 Descriptive Inorganic  
Chemistry from Chemistry Degree and from catalog.  
Level: Undergraduate  
Beginning Term: 051

**APPROVED**

**27. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM314 Physical/Inorganic  
**UNDERGRADUATE CURRICULUM MINUTES**



Chemistry Laboratory from Chemistry Degree and from catalog.

Level: Undergraduate  
Beginning Term: 051

**APPROVED**

**28. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM336 Biochemistry I from Chemistry Degree and from catalog.  
Level: Undergraduate  
Beginning Term: 052

**APPROVED**

**29. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM405 Intermediate Organic from Chemistry Degree and from catalog.  
Level: Undergraduate / Graduate  
Beginning Term: 054

**APPROVED**

**30. THE DEPARTMENT OF CHEMISTRY** requests:

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM402 Physical Chemistry II from Chemistry Degree and from catalog.  
Level: Undergraduate / Graduate  
Beginning Term: 051

**APPROVED**

**UNDERGRADUATE CURRICULUM MINUTES**

**31. THE DEPARTMENT OF CHEMISTRY requests:**

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM401 Physical Chemistry I from  
Chemistry Degree and from catalog.  
Level: Undergraduate / Graduate  
Beginning Term: 044

**APPROVED**

**32. THE DEPARTMENT OF CHEMISTRY requests:**

Presenter: Dr. Harry Brotherton  
Action: CLOSE and REMOVE CHEM337 Biochemistry I from  
Chemistry Degree and from catalog.  
Level: Undergraduate  
Beginning Term: 051

**APPROVED**