



CALIFORNIA POLYTECHNIC STATE UNIVERSITY  
San Luis Obispo, California 93407  
ACADEMIC SENATE  
805.756.1258

MEETING OF THE ACADEMIC SENATE EXECUTIVE COMMITTEE  
Tuesday, February 18, 2003  
UU220, 3:00 to 5:00pm

- I. Minutes: Approval of minutes for the January 28, 2003 Executive Committee meeting (pp. 2-3).
- II. Communication(s) and Announcement(s):
- III. Reports:
  - A. Academic Senate Chair:
  - B. President's Office:
  - C. Provost's Office:
  - D. Statewide Senators:
  - E. CFA Campus President:
  - F. ASI Representatives:
  - G. Other:
- IV. Consent Agenda:
- V. Business Item(s):
  - A. Academic Senate committee vacancy for 2002-2003: (p. 4).
  - B. Resolution on Completion of Senior Project: Breitenbach, chair of Instruction Committee (p. 5).
  - C. Curriculum proposal for change of degree title from BS to BFA in Art and Design: Hannings, chair of Curriculum Committee (pp. 6-8).
  - D. Curriculum proposal for BS in Wine and Viticulture: Hannings, chair of Curriculum Committee (pp. 9-14).
- VI. Discussion Item(s):
- VII. Adjournment:

-2-  
CALIFORNIA POLYTECHNIC STATE UNIVERSITY  
San Luis Obispo, California 93407  
ACADEMIC SENATE

MINUTES OF  
The Academic Senate Executive Committee  
Tuesday, January 28, 2003  
VU220, 3:00-5:00 p.m.

Preparatory: The meeting was opened at 3:10 p.m.

- I. Minutes: The minutes for the Executive Committee meeting of January 7, 2003 were approved without change.
- II. Communication(s) and Announcement(s): The Academic Senate meeting on February 11 will be a presentation by Jackie Kegley (Chair of the statewide Academic Senate), Susan Meisenhelder (President of CFA) and Andre Winnick (Associate Vice President for Academic Affairs, CSULA) on ACR73: a plan to increase the percentage of tenured/tenured-track faculty in the CSu. Everyone is welcome.
- III. Reports:
  - A. Academic Senate Chair: None.
  - B. President's Office: (Howard-Greene) The legislature and the Governor are disputing the mid-year reductions which are focused on creating savings by proposing budget cuts instead of raising taxes. The Council on University Citizenship has expanded its membership in order to increase the diversity of representatives. During the initial 18-month term, Provost Zingg will chair the Council and Harvey Greenwald will serve as Vice Chair.
  - C. Provost Office: (Dalton) The Chancellor's office and the President are very concerned and want to make sure that everyone understand the dire consequences of the budget. Everyone is encouraged to freely share with others how difficult it is to meet budget reductions in higher education. (Conn) The draft on student success presented by the system wide task force has two key points at the CSU level: (1) recommends that the CSU facilitates the campus efforts by granting pilot programs to modify Title V, and (2) the need for incentives to proceed rapidly towards a degree. At the campus level, there will be a meeting next week with the intent to narrow down a few action items to move on this year. The intent of the council is to provide direction to the campus community.
  - D. Statewide Senators: (Menon) At the statewide meeting in Long Beach last week, various issues were covered and much of what we have already heard about the budget was confirmed. We must wait until May for more details and due to the legislature's long budget process; a final budget probably won't be available until October. Several resolutions were covered that impact us including policy for possible program discontinuation, which the Academic Senate Faculty Affairs committee will review. (Foroohar) At the last system wide meeting, six resolutions were passed and six were presented for first reading. Three important reports were also presented, the first on faculty workload, which indicates that our faculty has an average load of 1 extra course per year than comparable institutions. A report on the roles and responsibilities of department chairs was also presented, and from this report, specific campus information will be distributed to each campus later. A report from the committee for elections of Faculty Trustee mentioned that the CSU system wide Senate will vote on March 3 and then send at least 2 recommendations to the Governor to choose one Faculty Trustee member for appointment to a 2-year term.
  - E. CFA Campus President: None.
  - F. ASI Representative: None.
  - G. Other: Joe Grimes, Special Assistant to the Provost for faculty Development and Director for the Center of Teaching and Learning, gave brief reports along with summary handouts, which were followed by some discussion, on the following issues:
    - a. Center for Teaching and Learning - their function is to enhance teaching and learning by providing necessary resources. The New Teacher Training workshops have been very well attended with high

enrollment and were very successful; therefore, more are being planned. More information is available at [www.academics.calpoly.edu/ctl/index.html](http://www.academics.calpoly.edu/ctl/index.html).

- b. Instructional Advisory Committee on Computing (IACC) - This committee handles issues such as scheduling of Smartrooms, and assessment in accreditation and program review process. More information is available at [www.iacc.calpoly.edu](http://www.iacc.calpoly.edu).
- c. CSU Academic Technology Planning - funded by the CSU, is in the process of implementing a significant computer and network infrastructure for the entire CSU. Some of the CSU academic initiatives and programs include the Center for Distributed Learning, Systemwide Library Initiatives, CalState TEACH, among others. More information is available at [http://its.calstate.edu/systemwide\\_it\\_resources/IT\\_resources.shtml](http://its.calstate.edu/systemwide_it_resources/IT_resources.shtml)
- d. Project PolyComm - The scope of this project includes the review of current environments relating to messaging, faxing, OpenTime and OpenMail. The first steps it to determine the needs and requirements of the campus constituents. For "Frequently Asked Questions" and detailed information, please visit <http://polycomm.calpoly.edu>.

IV. Consent Agenda: None.

V. Business Items:

- A. Universitywide committee vacancies for 2002-2003: Mary Kay Harrington has replaced Patrick McKim, as the College of Liberal Arts representative to the Instructional Committee.
- B. [CSU Academic Senate Resolution AS-2594-03/FGA] Resolution on Student Fees in the CSU; Mitigating Their Effects: Menon asked the Budget and Long Range Planning Committee to consider the resolution and the possibility of endorsing it. It is possible that our campus will be required to provide a formal response; therefore, it is to our advantage to start the review and discussion process now and not be pressed for time. The review of the resolution will be a charge to the Budget and Long Range Planning Committee.
- C. [CSU Academic Senate Resolution AS-2595-03/FA] Resolution on Opposition to Proposed Increase in CSU's Student Faculty Ratio: Menon announced that this resolution was presented to the Instructional Committee and the Budget and Long Range Planning Committee for their review because at some point we will be required to act on this issue. The review of the resolution will be a charge to the Instructional Committee and the Budget and Long Range Planning Committee.

VI. Discussion Item (s):

- A. Academic Senate meetings: attendance, substitute, proxies, and resignations: A copy of the attendance policy, which was given out to each senator at the beginning of the year, was presented as a reminder of the required procedures for substitutes, proxies, and resignations.
- B. Orientation for new senators: There was some discussion about the lack of and the need for, training of new senators in fall each year. Other CSU campus responses to the issue were presented which indicated that with the exception of Chico, none of the five campuses that responded provide their senator with much training. We will explore possible ways for providing better orientation for new senators. One option is to have a special session early in fall quarter for new senators during which the instructions in the introductory package for senators are explained by the Senate Chair, Vice-Chair, and Caucus Chairs to familiarize them with our protocols. More discussions will continue at a later date.

VII. Adjournment: meeting was adjourned at 5:00 p.m.

Submitted by:

  
Gladys Gregory,  
Academic Senate

**ACADEMIC SENATE COMMITTEES**  
**Vacancies for 2003-2004**

**College of Business**

Grants Review Committee

Replacement for Pat McQuade

Adopted:

ACADEMIC SENATE  
of  
CALIFORNIA POLYTECHNIC STATE UNIVERSITY  
San Luis Obispo, CA

AS- -031

RESOLUTION ON  
COMPLETION OF SENIOR PROJECT

1 WHEREAS, Many students leave Cal Poly without completing their degrees due to non-  
2 completion of the senior project; therefore, be it  
3

4 RESOLVED: That the faculty of Cal Poly adopt the following practices when advising senior  
5 project students:  
6

- 7 1. Department chairs (or designees) will hold meetings each spring and all  
8 potential senior project students must attend. (The target population for the  
9 meetings are students planning to graduate in the following three or four  
10 quarters.)
- 11 2. Department chairs (or designees) must provide senior project guidelines to  
12 students in electronic or printed form.
- 13 3. Department chairs should encourage faculty to provide more structure when  
14 advising senior project students. Each student should write and turn in a senior  
15 project proposal.
- 16 4. Faculty advisors must offer regularly scheduled meetings for their senior  
17 project students where specific timelines/outcomes can be defined. Faculty  
18 advisors should discourage students from taking on senior projects that are too  
19 large in scope.
- 20 5. Department chairs should ensure that faculty advisors use completion  
21 contracts (e.g., a timeline of what must be done and when) for senior projects.
- 22 6. Faculty advisors should turn in the senior project earned grade at the end of  
23 each quarter. Report in Progress grades (RP) should not be used nor assigned.  
24 If an "I" grade must be assigned (as defined in the catalog), an *I Contract* must  
25 be completed between the senior project advisor and the student.

Proposed by: Academic Senate Instruction Committee  
Date: January 30, 2003

California Polytechnic State University, San Luis Obispo  
Department of Art and Design  
February 10, 2003

## Summary of Proposed Change of Degree Title from *Bachelor of Science* to *Bachelor of Fine Arts*

Submitted by: Charles W. Jennings, Department Chair  
Department of Art and Design



This proposal is for a change of degree designation only. No curricular or programmatic changes will be needed or proposed to accompany this proposal.

We request approval to change the current degree designation *of Bachelor of Science in Art and Design* to *Bachelor of Fine Arts in Art and Design*. To this end we pose rationale under the following relevant categories:

### Academic History and Broadening of Post Baccalaureate Goals

The Bachelor of Science degree in Applied Art and Design was first offered at Cal Poly in 1977. From 1977 until the 1998-99 catalog, the program was limited to concentrations in "applied art" disciplines in Graphic Design and Commercial Photography. In the 1994-97 catalog, the term "Commercial" was dropped from the concentration in Photography, broadening the career emphasis to include fine art photography. With the addition of the concentration in Studio Art in the 1998-99 catalog, the curricular and career emphasis was further broadened, and the term "Applied" was deleted from the title of the degree program. Prior to the 1998-99 catalog, few of our graduates attempted to continue their education in post baccalaureate degree programs, opting instead to begin their professional careers.

The Master of Fine Arts (MFA) degree is recognized as the terminal graduate degree for teaching positions in Studio Art, Graphic Design and Photography. The MFA is also considered the professional terminal degree for artists and designers. With the implementation of the Studio Art concentration, more of our graduates are applying to graduate level degree programs in Art, especially to MFA programs in preparation for college/university level teaching positions. Additionally, increasing numbers of our graduates with concentrations in Graphic Design and Photography and Digital Imagery are pursuing teaching careers at the college/university level. Consequently, we anticipate a continued increase in interest in the pursuit of MFA degrees. More than the Bachelor of Science degree, the Bachelor of Fine Arts degree is traditionally recognized as the highest standard for the undergraduate degree in the professional visual arts.

A survey of the two-hundred thirty-six (236) visual art programs accredited by the National Association of Schools of Art and Design (NASAD) revealed that half (118) of the accredited programs offered the BFA as the professional visual arts degree. Fifty-six (56) of those programs offered the BFA and the MFA degrees. Only seventeen (17) programs offered the BS degree exclusive of the BA or BFA and MFA degrees. Those programs that offered the BS degree were predominately in the applied disciplines of industrial design, interior design, and art education.

A change in our degree designation from the Bachelor of Science degree to the Bachelor of Fine Arts degree will make our graduates more competitive for admission to MFA programs.

#### Title 5, Section 40506 Required Curriculum

The 2001-03 catalog requirements for the Bachelor of Science degree in Art and Design meets or exceeds all eligibility requirements for the Bachelor of Fine Arts Degree, as stated in Title 5, section 40506

#### Accreditation Standards and Commission Recommendations

The Bachelor of Science degree in Art and Design with its concentrations in Graphic Design, Photography and Digital Imagery, and Studio Art currently meets all the General Standards and Guidelines for Undergraduate Professional Degree Programs in the Visual Arts and Design, and is accredited as such by the National Association of Schools of Art and Design (NASAD), Reston Virginia.

The 2001-2002 NASAD Handbook on accreditation states the following:

*The Bachelor of Fine Arts and titles such as Bachelor of Science in Design (when used to designate professional rather than liberal arts curricula), Bachelor of Graphic Design, and Bachelor of Industrial Design indicate the initial professional degree in art or design. Irrespective of title, the primary emphasis is on the development of skills, concepts and sensitivities essential to the professional artist or designer. ... While admission to a program leading to the professional degree may be subject to general institutional admission policies, the emphasis should be on evidence that the candidate possesses requisite visual talent, art/design sensibilities, academic capacity, and, particularly, a strong sense of commitment.*

In order to meet NASAD standards for professional degree programs, 65% of our curriculum requirements must be in the "creation and study of art and design. With 68 units in General Education and 9 units of **electives**, we require 198 quarter units to complete the Bachelor of Science degree in Art and Design. Comparatively, the Bachelor of Fine Arts programs in Art at San Jose State University and California State University, Fullerton require 132 semester units, equal to 198 quarter units. The Bachelor of Fine Arts programs in Art at SJSU and CSUF are fully accredited by NASAD.



First accredited in 1995, Cal Poly's program in Art and Design recently completed its second five-year self-study and review for renewal of accreditation by NASAD. In October, 2001, the NASAD Commission of Accreditation granted Membership for a five year period. In its report, the Commission made the following recommendation:

*The Commission notes that the degree, Bachelor of Science in Art and Design, with concentrations in Graphic Design, Photography and Digital Imagery, and Studio Arts, is in accordance with the standards for a professional degree program. Further, the Commission concurs with the goals and objectives of this professional program as stated in the Self-Study and the NASAD Visitors' Report, and encourages the institution to continue to move forward with the University for a change in the designation of the degree to Bachelor of Fine Arts. (see Self-Study, pages 3-4, 99; NASAD Visitors' Report, page 16; NASAD Handbook 2001-2002, pages 74-75, item V)*

### Students' Competencies

The Art and Design program at Cal Poly has high impacted demand for admissions. Each year, approximately five hundred fifty (550) individuals apply for an annual admissions target of approximately fifty (50) new students. Consequently, we have one of the most rigorous admissions standards and procedures for visual arts programs in the CSU system. First-time freshmen applicants must achieve a minimum score of 3500 on the Multi-criteria Assessment. Of the first-time freshmen admitted in the last five years, GPAs averaged 3.61 with a minimum of 3.0; and SAT scores averaged 1200. Of the transfer students who were admitted, GPAs averaged 3.31 with a minimum of 2.60. Additionally, all first-time freshmen and transfer students are required to submit a portfolio of visual art works for review and evaluation by faculty. Our portfolio standards are rigorous and commensurate with portfolio standards for admission to comparable BFA programs within the CSU system. Consequently, students admitted to our program must meet rigorous standards that demonstrate requisite visual talent, art/design sensibilities, academic capacity, and a strong sense of commitment consistent with the standards for Bachelor of Fine Arts programs such as found at San Jose State University and California State University, Fullerton.

As part of our degree requirements, all Art and Design students must complete Art 462 Senior Portfolio Project. Credit for Art 462 is contingent on students' participation in at least two exit portfolio reviews in which professional artists, designers, and photographers review their work. This review is thus a requirement for granting a degree from Art and Design. This requirement is consistent with standards of excellence for programs that grant the BFA degree.



# NEW DEGREE PROGRAM

## Bachelor of Science in Wine and Viticulture

### TABLE OF CONTENTS

I.	NEW DEGREE PROGRAM, BS WINE AND VITICULTURE	
1.	Definition of the Proposed Degree Program	4
2.	Need for the Proposed Degree Program	13
3.	Existing Support Resources for the Proposed Program	17
4.	Additional Support Resources Required	18
5.	Proposed Catalog Description	20
II.	APPENDICES TO WINE AND VITICULTURE PROPOSAL	
Appendix 1	Dean's and Librarian's Statements	23
Appendix 2	Department Acknowledgements	28
Appendix 3	Comparisons with Potentially Related Programs	39
Appendix 4	Letters of Support	61
Appendix 5	Employment Data	87
Appendix 6	Wine and Viticulture Skills Matrix	95
Appendix 7	Office and Laboratory Space	99
Appendix 8	New Course Proposals	101
Appendix 9	Cal Poly Related Courses and Minors	111
Appendix 10	Community College Viticulture Initiative	119

1. DEFINITION OF THE PROPOSED DEGREE PROGRAM

a. *Campus, degree, and year of intended implementation:*

Campus: Cal Poly, San Luis Obispo

Degree title: Bachelor of Science in Wine and Viticulture

Year of intended implementation: 2004-05

b. *College offering the degree:* College of Agriculture

This is a multidisciplinary program administered by department concentration coordinators from the Agribusiness Department, the Horticulture & Crop Science Department, and the Food Science & Nutrition Department. The primary administrative coordination responsibility will be held by a College of Agriculture Dean's designee.

c. *Objectives:*

The primary objective is to form an academic alliance among production agriculture, food science and agricultural product marketing that offers an undergraduate degree linking grape cultivation, enology, and marketing in a unique major based on fundamental and applied sciences, modern business principles, and appropriate social sciences. This "vine to glass" approach is the first such comprehensive major to be offered in California. Graduates of the program will have hands-on experience in and understand all aspects of the wine industry from vine husbandry, to the complexities of fermentation and wine chemistry, to sales and marketing. This degree could only be developed and offered at Cal Poly due to our already strong, nationally recognized programs in the above three academic disciplines.

Thus, the second objective is to offer three multidisciplinary concentrations: Agribusiness, Food Science (Enology) and Fruit Science (Viticulture). Students enrolled in this major can take advantage of the diverse course offerings in these concentrations and participate in other extracurricular activities associated with these academic programs, such as student clubs, student enterprise projects, industry interactions, funded applied research projects, internships, and professional society meetings.

d. *Rationale Statements for the Major*

Rationale for the Wine and Viticulture Major

This new major will form an academic alliance among faculty in production agriculture, food science and agricultural product marketing that offers an undergraduate degree linking grape cultivation, enology, and marketing in a unique major based on fundamental and applied sciences, modern business principles, and appropriate social sciences. This "vine to glass?" approach is the first such comprehensive major to be offered in the State. Graduates of the

program will have hands-on experience in and understand all aspects of the wine industry from vine husbandry, to the complexities of fermentation and wine chemistry, to sales and marketing. This degree can be developed and offered at Cal Poly due to our already strong, nationally recognized programs in three agricultural disciplines.

*e. Total number of units required: 180*

The proposed major lists existing courses from nine departments, with the remainder of courses coming from general education and elective offerings.

Dr. Richard Smart, Visiting Professor in the Horticulture and Crop Science Department, is also offering FRSC x415, Vine Physiology, as an experimental course.

Number of new courses needed to initiate the program: 2

WV 102: Grapes and Wines of the World (4)

WV 463: Issues and Trends in Wine (2)

*f. Special characteristics requiring explanation:*

A CAGR Dean's designee will serve as the major program coordinator and will work with departmental coordinators responsible for each of the three concentrations.

It is hoped that an enology program can be created in cooperation with CSU Fresno and/or UC, Davis so that our Food Science (Enology) concentration students can study at one of these institutions. As enrollment in the Food Science (Enology) concentration grows, a pilot winery and analytical teaching laboratory will be built with private funds.

*Evidence of student interest:*

A student survey was administered during 2001-02 with three participating groups of students: an introductory viticulture class (FRSC 231), a branded wine marketing class (AGB 443), and the Vines to Wines Club. Students who were in more than one group were asked to only take the survey once. A total of 113 students completed the survey. The total responses may not equal 113 in accordance with the questions' instructions. The table below summarizes the survey results.

*Questions and Responses on the Student Survey*

1.) Would you have picked the Wine and Viticulture major as a freshman, if available?

YES	63	NO	40
-----	----	----	----

2.) Would you transfer now to the Wine and Viticulture major if it was available?

YES	42	NO	56
-----	----	----	----

3.) Which concentration would you choose if you could enroll in the Wine and Viticulture major?

Agribusiness	39
Food Science (Enology)	15
Fruit Science (Viticulture)	30

*Demographics of Student Responders*

Major	Number	Year	Number	Major	Number
AGB	66	2001	3	Wine & Vito	61
FRSC	12	2002	35	AGB	8
AGSC	5	2003	43	FRSC	1
ASM	6	2004	5	BUS	1
FSN	2	beyond 2004	3	SPAN	1
BUS	6			PSYCH	1
NUTR	3				
GRAD	5				
EHS	3				
CRSC	2				
REC	1				
JOUR	1				
PPSC	1				

*The actual and expected number o/majors in this proposed major and in related Cal Poly majors.*

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Wine and Viticulture Major						70	100	125	150
W&V minor	50	73	146	175	200	200	200	200	200
Food Science	120	120	110	115	120	125	130	130	130
Fruit Science	82	91	78	80	80	80	80	80	80
AGB	870	975	977	1050	950	900	900	850	850
TOTAL	1072	1185	1165	1245	1150	1105	1110	1070	1070

## BS WINE AND VITICULTURE

060 units upper division OGWR

02.0 GPA OUSCP

\* = Satisfies General Education requirement

### MAJOR COURSES

WV 102 Grapes and Wines of the World	4
FRSC 231 Viticulture	4
FRSC 331 Advanced Viticulture	4
AGBIFRSCIFSN 339 Internship	4
FSN 341 Wine and Fermented Foods	3
AGB 401 Managing Cultural Diversity in Agricultural Labor Relations	4
FSN 411 Sensory Evaluation of Food	3
AGB 443 Branded Wine Marketing	4
AGB 460/4611CRSCIFSN 4611462 Senior Project	2,2
WV 463 Issues and Trends in Wine	2
CHEM III Survey of Chemistry (B3)*	5
SS 121 Introductory Soil Science	4
BUS 212 Financial Accounting for Nonbusiness Majors	4

Concentration units 45

Advisor-approved electives 20  
114

### GENERAL EDUCATION (GE)

72 units required: 20 units are in Major

→ See page 79 for complete GE course listing

→ Minimum of 12 units required at the 300-400 level

#### Area A Communication (12 units)

Take one course/rom AI, A2, A3:

AI Expository Writing	4
A2 Oral Communication	4
A3 Reasoning, Argumentation, and Writing	4

#### Area B Science and Mathematics (no additional units are required)

B1 Mathematics/Statistics *8 units in Major	0
B2 Life Science *4 units in Concentrations	0
B3 Physical Science *4 units in Major	0
B4 One lab taken with either a B2 or B3 course	0

#### Area C Arts and Humanities (20 units)

CI Literature	4
C2 Philosophy	4
C3 Fine/Performing Arts	4
C4 Upper-division elective	4

#### Area C elective (Choose one course from CI-C4)

#### Area D Society and the Individual (20 units)

01 The American Experience (40404)	4
02 Political Economy	4
03 Comparative Social Institutions	4
D4 Self-Development (CSU Area E)	4
D5 Upper-division elective	4

#### Area F Technology Elective (upper division)

GENERAL EDUCATION TOTAL 56

### CONCENTRATIONS (select one):

#### Agribusiness Concentration

AGB 202 Sales, Communication and Leadership in Agribusiness	4
AGB 212 Agricultural Economics	4
AGB 301 Food and Fiber Marketing	4
AGB 310 Agribusiness Credit and Finance	4
AGB 323 Agribusiness Managerial Accounting	4
AGB 422 Logistics in Global Agribusiness	4
AGB 444 Wine Compliance and Market Analysis	4
AGB 450 Agribusiness Strategy Fortnulation	4
BIO III General Biology (B2)*	4
MATH 118 Pre-Calculus Algebra or MATH 221 Calculus for Business (B1)*	4
STAT 221 Introduction to Probability and Statistics (B 1)*	5
Concentration Units	45

#### Food Science (Enology) Concentration

FSN 264 Survey of Food Chemistry	4
FSN 278 Food and Wine Plant Sanitation	4
FSN 334 Food Packaging	4
FSN 374 Food Laws and Regulations	4
FSN 464 Wine Chemistry and Analysis	4
FSN 470 Advanced Topics	4
MATH 118 Pre-Calculus Algebra or MATH 141 Calculus I (B1)*	4
CHEM 312 Survey of Organic Chemistry	5
ECON 201 Survey of Economics	4
MCRO 221 Microbiology (B2)*	4
STAT 218 Applied Statistics for the Life Sciences (B 1)*	4
Concentration Units	45

#### Fruit Science (Viticulture) Concentration

FRSC 210 Viticultural Practices	2
FRSC 414 Grape Pest Management	4
FRSC 415 Vine Physiology	4
PPSC 321 Weed Ecology	4
PPSC 3\1 Insect Pest Management	4
MATH \18 Pre-Calculus Algebra or MATH 14\ Calculus I (B 1)	4
BIO 303 Survey of Genetics	3
BOT \21 General Botany (B2)*	4
BRAE 439 Vineyard Irrigation	4
ECON 201 Survey of Economics	4
SS 22\ Fertilizers and Plant Nutrition	4
STAT 218 Applied Statistics for the Life Sciences (B 1)"	4
Concentration Units	45

Free electives 10

Total (118 + 52 +10) Units 180

## Schematic Structure of Wine and Viticulture Major (General Topic Areas)

