PLEASE NOTE: Members, when addressing Faculty Council, please stand and identify yourselves. Guests wishing to speak please fill out a guest card to be handed to the Chair prior to speaking.

PLEASE NOTE: Members planning to introduce amendments are requested to provide copies to the Faculty Council Office, 18A Administration, at least 24 hours before this meeting.

AGENDA

Faculty Council Meeting

Tuesday, November 6, 2012 - 4:00 p.m. - Room A102 Clark Building

Announcements

A. Next Faculty Council Meeting - December 4, 2011 - A102 Clark Building - 4:00 p.m.

B. Executive Committee Meeting Minutes - October 9, 16, and 23, 2011 (Executive Committee Meeting Minutes can be viewed at: http://facultycouncil.colostate.edu/index.asp?url=links)

Minutes to be Approved

A. Faculty Council Meeting Minutes - October 2, 2013 (pp. 1-8)

Reports To Be Received

A. Provost/Executive Vice President

B. Faculty Council Chair

C. Faculty Representative to the Board of Governors (p. 9)

Consent Agenda

A. Changes in Curriculum to be Approved: University Curriculum Committee Minutes: September 7, 21, 28, and October 5, 2012 (pp. 10-26)

Action Items

A. Proposed Revisions to the Manual, Section E.10.4.1.2 - Extension of the Probationary Period - Committee on Responsibilities and Standing of Academic Faculty - (p. 27)

B. Proposed Revisions to the Manual, Section E.14 - Performance Reviews - Committee on Responsibilities and Standing of Academic Faculty (pp. 28-29)

C. Request for New Graduate Interdisciplinary Studies Program - Department of Anthropology - Resilience of Social Ecological Systems - University Curriculum Committee (pp. 30-40)

D. Request for a New Major (B.S.) In Fermentation Science and Technology - College of Applied Human Sciences - Department of Food Science and Human Nutrition - University Curriculum Committee (pp. 41-65)

E. Proposed Addition to the *Curricular Policies and Procedures Handbook* - "Definition of Instructional Format" University Curriculum Committee (pp. 66-67)

F. Proposed Revisions to the *Graduate and Professional Bulletin* - Section F.2.3 - Graduate Assistantship - Terms and Conditions of Appointment - Committee on Scholarship, Research, and Graduate Education (p. 68)

Secretary's Note: Please detach at this line, print your name, and leave in attendance box at the Faculty Council meeting. If you must be absent, you are encouraged to send a substitute representative of academic faculty status in order to provide proper representation at the meeting. Substitutes should turn in the attendance slip at the meeting and indicate on the slip whom they are representing. Members will find it helpful to have copies of the Faculty Council, University Curriculum Committee and Executive Committee minutes available for reference at the meeting.

To Faculty Council Members: Your critical study of these minutes is requested. If you find errors, please call, send a memorandum, or E-mail immediately to Diane L. Maybon, ext 1-5693.

NOTE: Final revisions are noted in the following manner: additions underlined; deletions ~~over scored~~.

MINUTES
FACULTY COUNCIL
OCTOBER 2, 2012

CALL TO ORDER

The Faculty Council meeting was called to order at 4:00 p.m. by Timothy Gallagher, Chair.

ANNOUNCEMENTS

A. Next Faculty Council Meeting - November 6, 2012 - A102 Clark Building - 4:00 p.m.

Gallagher announced the next regularly scheduled Faculty Council meeting will be held on Tuesday, November 6, 2012 in A102 Clark Building at 4:00 p.m.

B. Executive Committee Meeting Minutes - August 21, September 11 and 18, 2012

Gallagher announced that the above Executive Committee meeting minutes have been posted on the Faculty Council website for Faculty Council members information. (http://facultycouncil.colostate.edu/index.asp?url=links)

MINUTES TO BE APPROVED

A. Faculty Council Meeting Minutes - September 4, 2012

Antonio Pedros-Gascon noted a correction in the last paragraph of Tony Frank's report. He asked that the minutes be changed to read:

> "Antonio Pedros-Gascon asked if Frank agreed with an email sent to chairs of departments requesting that all non tenure-track faculty should be given the right to vote in academic topics/faculty decisions. Pedros-Gascon reminded that there are some departments, like Foreign Languages or English, in which non tenure-track faculty may outnumber tenure-track faculty in a rate of up to three to one."

Raymond Robinson moved to make this correction to the September 4, 2012 Faculty Council meeting minutes.

Robinson's motion was adopted.

By unanimous consent, the September 4, 2012 Faculty Council Meeting Minutes were approved, as corrected.

Diane Maybon will correct the September 4, 2012 Faculty Council meeting minutes to reflect this correction.

REPORTS TO BE RECEIVED

A. Provost/Executive Vice President

Rick Miranda, Provost/Executive Vice President presented the Version 1.0 September 2012 University FY14 Incremental E&G Budget to Faculty Council. This presentation will be posted on the Faculty Council website.

David Green asked about differential tuition and which departments participate, and how the differential tuition program is modeled. Miranda responded that the current model charges junior and seniors greater amounts of tuition if they take a lower division course (regardless of the academic program), compared to tuition amount paid by a freshman or sophomore. Miranda added that differential tuition is charged only

after 60 credits have been earned. Greene asked how faculty can explain differential tuition to a parent? Miranda responded that juniors and seniors generally take upper-division classes, and only a few take lower-division classes. He added that juniors and seniors taking lower-division courses do pay a higher tuition rate than a freshman or sophomore, but such cases are relatively few. Alan Lamborn explained that students are given 60 credits to identify and commit to an academic program, giving them the opportunity to complete lower division courses at the lower tuition rate. Richard Eykholt added that the current model makes it easier to calculate tuition bills and to explain it to parents as the rate is based on majors and the year of student, and not by what courses they take.

Miranda's report was received.

B. Faculty Council Chair

Gallagher reported that the Executive Committee is not currently planning on having a discussion item at the November 6, 2012 Faculty Council meeting because that date is Election Day.

Gallagher reported that he held an orientation session for the Faculty Council standing committee chairs in September. He added that he is continuing to attend at least one meeting of each standing committee. He reported that he has attended meetings of the Committee on Special and Temp Faculty, Committee on Responsibilities and Standing of Academic Faculty, Committee on Libraries and the Committee on Scholastic Standards since the September Faculty Council meeting.

Gallagher reported that he had a meeting with Jerry Peterson, Chair of Faculty Assembly at the University of Colorado. Gallagher reported that they discussed state-wide issues where there is common ground and aligned interests. Gallagher reported that the Colorado Commission on Higher Education (CCHE) is working on performance contracts that will apply equally to Colorado State University, the University of Colorado, and all the community colleges within the State. Gallagher reported that he and Peterson would like to work together to ask the CCHE to include Graduate Education and Research within the performance contracts. Gallagher added that another area of possible collaboration is in regards to handgun policies on our respective campuses.

Gallagher's Report was Received.

Carl Patton was recognized by Gallagher.

Patton moved to suspend the rules to add an item to the October 2, 2012 Faculty Council agenda. Patton explained that the item would be to call for a "straw vote" of Faculty Council on whether it supports the administration's proposed construction of the much discussed main-campus football stadium to replace Hughes Stadium.

Gallagher explained that this motion was not debatable and would require a two-thirds vote of the Faculty Council members to pass.

Patton's motion was not adopted. (The vote was 31 yes votes; 19 no votes and 33 votes were required for two-thirds.)

C. Associated Students of Colorado State University (ASCSU) - Officers - Student Issues

Regina Martel, ASCSU President thanked Faculty Council for the invitation to come and speak to the assembly regarding student issues on campus. Martel reported that ASCSU is a resource on campus for students and its mission is to improve student life on campus. Martel encouraged collaborations and partnership with Faculty Council members regarding undergraduate student issues.

Martel introduced Audrey Purdue, ASCSU Director of Health. Purdue presented the results of the CSU Tobacco Survey. Martel explained that there is a nationwide concern and trend for smoke-free colleges. She added that tobacco is the leading cause of preventable death and disease. Purdue noted that Dr. Howard Koh, Assistant Secretary for Health at the U.S. Department of Health and Human Services, announced a national initiative to eliminate tobacco use on college campuses on September 12, 2012. This entire presentation will be posted on the Faculty Council website.

Purdue, after her presentation, explained that the next steps will be to present the survey results to other groups on campus and hold open forums in Spring 2013 to discuss the issue of tobacco use on campus.

Gallagher thanked the ASCSU officers for their report to Faculty Council.

Martel's and Purdue's reports were received.

D. Graduate Student Council - Officers - Student

Gallagher introduced Katherine Zaunbrecher, President Graduate Student Council, and Douglas Ortega, Vice President Graduate Student Council.

Zaunbrecher explained that the Graduate Student Council is a student organization that represents Graduate Students on various CSU committees, Faculty Council standing committees, and organizations. Zaunbrecher explained that the Graduate Student Council has been able to secure financial support to hold activities and give financial awards. In addition, an office of Graduate Student Affairs in ASCU has been established. Zaunbrecher explained that this is helping with recruiting and visibility of the Graduate Student Council.

Ortega reported that activities sponsored by the Graduate Student Council have mainly focused on social events to bring graduate students together and to help develop a sense of community (e.g., fall picnics, Tuesday Tea, and FAC). Ortega reported that sponsored professional events include speakers, movies, and seminars for graduate students interested in the transition from academics to private industry.

Ortega reported that the Graduate Student Council would like greater advocacy and more active members. In addition, the Graduate Student Council would like to have appropriate representation of Graduate Students on University committees to address health insurance and sustainability issues.

Robinson asked how is the Graduate Student Council structured under ASCSU? Zaunbrecher explained that the Graduate Student Council is responsible to advocating for graduate students and is a part of ASCSU. Zaunbrecher added that the Graduate Student Council does not have a designated office space but it does have a website.

Mike Lundblad asked that the Graduate Student Council send emails to Faculty Council members so that their events can be publicized more broadly.

Pedros-Gascon asked if Graduate Student Council has voting powers. Zaunbrecher and Ortega responded that graduate student members of Faculty Council standing committees have the right to vote.

Gallagher thanked Zaunbrecher and Ortega for their report to Faculty Council.

Zaunbrecher's and Ortego's report was received.

CONSENT AGENDA

A. Changes in Curriculum to be Approved: University Curriculum Committee Minutes: August 24 and 31 and September 7, 2012

B. Approval of Degree Candidates - Fall Semester 2012

Howard Ramsdell, Chair, University Curriculum Committee, moved that Faculty Council approve the above Consent Agenda items.

Ramsdell's motion was adopted and the Consent Agenda items were approved.

ACTION ITEMS

A. Elections - Student Representatives (Graduate and Undergraduate) - Faculty Council Standing Committees - Committee on Faculty Governance

Steve Reising, Vice Chair, Committee on Faculty Governance, moved that the Faculty Council adopt the undergraduate and graduate students nominated to serve on Faculty Council Standing Committees.

The students nominated to serve on Faculty Council Standing Committees were elected to one year terms beginning October 2012 to June 30, 2013.

DISCUSSION

A. Campus Climate Survey Results - Mary Ontiveros, Vice President for Diversity

Gallagher introduced Mary Ontiveros, Vice President for Diversity. Ontiveros noted that the full report on the Campus Climate Survey can be found on the Diversity website: www.diversity.colostate.edu/campus-climate-2012.aspx click on "By the Numbers."

Ontiveros explained that the original goal was to develop a survey only to survey faculty and staff about diversity. However, it became evident and very clear that other issues were pertinent (e.g., women and gender equity, Commitment to Campus, and issues regarding the Fort Collins community). Ontiveros added that the Survey also needed to be inclusive of off-campus employees.

Ontiveros noted the following areas of potential concern:

Classified Staff: Not content with several issues, such as less vacation and sick leave than Administrative Professional staff, inflexible work hours/tasks, and inability to negotiate salary, etc.

Associate Professors were less content than Assistant and Full Professors. For example, Associate Professors felt under-appreciated/under-valued, and without a strong voice in departments. Other issues included stagnant salaries, or unfair salaries compared to high-earning Assistant Professors.

Adjunct/Contingent/Part-Time Faculty: Felt they were not valued and have no voice in shared governance.

Harassment: One in five (20 percent) of the respondents felt that they had been harassed at some point, although harassment was not defined nor was date of harassment provided. Ontiveros stated that this is a concern that must be considered in the future.

Ontiveros noted that the proportion of "neutral" responses was high when asked if departments were working to recruit diverse staff. Ontiveros noted that this is a concern because it indicates that departments may not be actively recruiting diverse staff or respondents are ambivalent.

Ontiveros stated that she has conducted Focus Groups of CSU employees, and the results are being compiled. Ontiveros noted that individuals that participated provided first-hand anecdotes of employee satisfaction.

Ontiveros explained that the next steps will include the development of a plan to recruit and retain diverse staff, provide more in-depth analysis, and the sharing of results with individual colleges and departments.

Robinson asked if colleges and departments were identified in the survey? Ontiveros responded yes and no. She explained that the respondents were asked what division (President, Vice Presidents, Colleges) they worked in, but some respondents did not provide this information. She added that information is not available by department. Ontiveros stressed that confidentiality is of great importance so a specific question about department affiliation will not be asked. Ontiveros noted that Institutional Research is currently summarizing the results by College and this information will be available when completed.

Jenn Matheson asked if respondents were representative of employee demographics? Ontiveros responded yes. Deb Young asked for insights regarding harassment claims. Ontiveros replied that reports of harassment by respondents suggest that most incidences were verbal and gender related.

Ontiveros asked that if Faculty Council members had further questions or insights on the survey to please contact her.

Gallagher thanked Ontiveros for her presentation to Faculty Council. Gallagher noted that this presentation would be posted on the Faculty Council website.

The Faculty Council meeting adjourned at 5:35 p.m.

Timothy Gallagher, Chair
Mary Stromberger, Vice Chair
Diane L. Maybon, Executive Assistant/Secretary

ATTENDANCE
BOLD INDICATES PRESENT AT MEETING
UNDERLINE INDICATES ABSENT AT MEETING

Agricultural Sciences	
Stephen Koontz, Excused	**Agricultural and Resource Economics**
Denny Crews	Animal Sciences
Deb Young	**Bioagricultural Sciences & Pest Management**
Steve Newman	**Horticulture & Landscape Architecture**
Francesca Cotrufo	**Soil and Crop Sciences**
Dana Hoag	College-at-Large
Andrew Norton	College-at-Large
Kelly Curl	**College-at-Large**
Applied Human Sciences	
Molly Eckman	**Design and Merchandising**
Tracy Nelson-Ceschin	**Health and Exercise Science**
David Sampson	**Food Science and Human Nutrition**
Jenn Matheson	**Human Development and Family Studies**
Scott Glick	**Construction Management**
Matthew Malcolm	Occupational Therapy
Sharon Anderson	**School of Education**
Louise Quijana (Substitute for K. Bundy-Fazioli Spring 2013)	**School of Social Work**
Business	
Suzanne Lowensohn	**Accounting**
Stephen Hayne	**Computer Information Systems**
Patricia Ryan	Finance and Real Estate
Jim McCambridge	**Management**
Kelly Martin	**Marketing**
Engineering	
Russ Schumacher	Atmospheric Science
Brad Reisfeld	**Chemical and Biological Engineering**
Suren Chen	**Civil and Environmental Engineering**
Steve Reising	**Electrical and Computer Engineering**
Don Radford	**Mechanical Engineering**
Eric Maloney	**College-at-Large**
Sudeep Pasricha	**College-at-Large**
Liberal Arts	
Ann Magennis (Substitute for Van Buren Fall '12)	**Anthropology**
Eleanor Moseman	**Art**
Elizabeth Williams	**Communication Studies**
David Mushinski	**Economics**
Michael Lundblad	**English**
Ernesto Sagas	**Ethnic Studies**
Antonio Pedros-Gascon	**Foreign Languages and Literatures**
Robert Gudmestad	**History**
Cindy Christen	**Journalism and Technical Communication**
Gary Moody	**Music, Theater, and Dance**
Michael McCulloch	**Philosophy**
Bradley MacDonald	**Political Science**
Ken Berry	**Sociology**

Liberal Arts (continued)

Francisco Leal (Substitute for Vogl Spring '13)	College-at-Large
Kari Anderson (Substitute for Aoki Fall '12)	College-at-Large
Alex Bernasek	College-at-Large

Natural Resources

Melinda Laituri	Ecosystem Science and Sustainability
Paul Doherty	Fish, Wildlife, and Conservation Biology
Yu Wei	Forest, Rangeland, and Watershed Stewardship
J. Magloughlin for Sally Sutton (Substitute S. Egenhoff)	Geosciences
Stu Cottrell	Human Dimensions of Natural Resources

Natural Sciences

Eric Ross	Biochemistry and Molecular Biology
David Steingraeber	Biology
John Wood	Chemistry
Robert France	Computer Science
Iuliana Oprea	Mathematics
Raymond Robinson	Physics
Benjamin Clegg	Psychology
Philip Chapman	Statistics
Ed DeLosh	College-at-Large
Mike Steger	College-at-Large
R. Eykholt for Roger Culver	College-at-Large
Carl Patton	College-at-Large

Veterinary Medicine & Biomedical Sciences

Scott Earley	Biomedical Sciences
Daniel Smeak	Clinical Sciences
D. Gilkey for J. Rosecrance	Environmental & Radiological Health Sciences
Gary Mason	Microbiology, Immunology and Pathology
Terry Nett	College-at-Large
Jeffrey Wilusz	College-at-Large
C. W. Miller	College-at-Large
Alan Schenkel	College-at-Large
Susan Kraft	College-at-Large
William Hanneman	College-at-Large
Ron Tjalkens	College-at-Large

University Libraries

Michelle Wilde (Substitute for N. Hunter Fall '12)	Libraries
Louise Feldmann	At-Large

Officers

Tim Gallagher	Chair, Faculty Council
Mary Stromberger	Vice Chair, Faculty Council
Carole Makela, Excused	BOG Faculty Representative
Diane Maybon	Executive Assistant/Secretary
Lola Fehr	Parliamentarian

Ex Officio Voting Members (*Indicates Elected Member of Faculty Council)

Steve Resising for D. Estep, Chair	**Committee on Faculty Governance**
Susan LaRue, Chair	**Committee on Intercollegiate Athletics**
Jerry Magloughlin, Chair	**Committee on Libraries**
David Greene, Chair	**Committee on Responsibilities & Standing of Academic Faculty**
Mark Zabel, Chair	Committee on Scholarship Research and Graduate Education
Melinda Frye, Chair	**Committee on Scholastic Standards**
Jeff Wilusz, Chair*	Committee on Strategic and Financial Planning
Stephanie Clemons, Chair	**Committee on Teaching and Learning**
Eric Prince, Chair	Committee on University Programs
Howard Ramsdell, Chair	**University Curriculum Committee**

Ex Officio Non-Voting Members

Jennifer Aberle, Chair	**Committee on Special and Temporary Faculty**

Ex-Officio Non-Elected Non-Voting Members

Anthony Frank, excused	**President**
Rick Miranda	**Provost/Executive Vice President**
Brett Anderson	Vice President for Advancement
Mary Ontiveros	**Vice President for Diversity**
Lou Swanson	Vice Provost for Engagement/Director of Extension
Robin Brown	Vice President for Enrollment and Access
Dan Bush	**Vice Provost for Faculty Affairs**
Jodie Hanzlik	Dean Graduate School
Patrick Burns	Vice President for Information Technology/Dean Libraries0
Jim Cooney	Vice Provost for International Affairs
Tom Milligan	Vice President Public Affairs
Bill Farland	Vice President for Research
Blanche M. Hughes	Vice President for Student Affairs
Alan Lamborn	**Vice Provost for Undergraduate Affairs**
Amy Parsons	Vice President for University Operations
Craig Beyrouty	Dean, College of Agricultural Sciences
Jeff McCubbin	Dean, College of Applied Human Sciences
Ajay Menon	Dean, College of Business
Steve Abt	Interim Dean, College of Engineering
Ann Gill	Dean, College of Liberal Arts
Jan Nerger	**Dean, College of Natural Sciences**
Mark Stetter	Dean, College of Veterinary Medicine and Biomedical Sciences
Joyce Berry	Dean, Warner College of Natural Resources
David Mornes	**Chair, Administrative Professional Council**

The Board of Governors of the
Colorado State University System
Meeting Date: October 4, 2012
Action Item

✓
Approved

Stretch Goal or Strategic Initiative: N/A

MATTERS FOR ACTION:

The Board of Governors of the Colorado State University System (Board) support for President Frank's recommendations and plan for initial fundraising and additional planning for an on campus stadium at Colorado State University (CSU).

RECOMMENDED ACTION:

MOVED, that the Board of Governors of the Colorado State University System hereby supports President Tony Frank's recommendations relating to the planning and fund raising efforts necessary for a new stadium on the main campus of CSU. The President is authorized to initiate the following actions, taking into account the comments made by the Board during the meeting:

1) to embark on fundraising efforts for a new stadium located on the main campus;
2) to embark on the next phase of planning for the new stadium, including the development of a program plan and an amendment to the campus master construction plan;
3) to regularly report to the Board on progress in planning and fund raising;
4) to develop a proposal for financing that meets the guidelines articulated to the Board by President Frank in open session on this date. Such a proposal would include a report on the impact of the financing plan on the university's financial status and would be brought to the Board when a substantial majority (more than fifty percent of the current projected cost) of the philanthropic portion of the financing plan has been raised. If fund raising is not at this stage by the October 2014 meeting of the Board of Governors, the President should be prepared to submit a report with recommendations to the Board.

FURTHER, President Frank is directed to work closely with the City of Fort Collins and all campus and community constituents to attempt to minimize any negative impact of the stadium. Finally, the Board directs the President in his planning efforts to assure that the new stadium is fully compliant with and integrated into the long term plans for growth and other proposed construction projects on the CSU campus.

EXPLANATION PRESENTED BY: Colorado State University President, Tony Frank.

X
Approved

_____
Denied

Marylou Makepeace
Marylou Makepeace, Board Secretary

10

MEMORANDUM

DATE: October 23, 2012

TO: Tim Gallagher, Chair, Faculty Council

FROM: Howard Ramsdell, Chair, University Curriculum Committee

SUBJECT: Proposed Changes in Curriculum - September 7, 21, 28 and October 5, 2012

CURRICULAR REQUESTS – SEPTEMBER 7, 2012

° Course is offered for term specified in odd numbered years.
NT-O, offered as nontraditional, online course.

The following curricular requests were approved.

New Courses — **Effective Date**

MECH 511 03(3-0-0). Engineering Decision Making under Uncertainty. S. Prerequisite: MECH 410; STAT 315. — Spring Semester 2013

Systems engineering and engineering economic methodologies for evaluating interdependent capital expenditure proposals under incomplete information. (NT-O)

[Approved as both a new traditional and new nontraditional online course.]

°**MECH 543 03(3-0-0). Biofluid Mechanics.** S. Prerequisite: MECH 342 or CIVE 300 or (BMS 300 and PH 121) or (BMS 300 and PH 141) or BMS 420. Fluid dynamic concepts for understanding fluid motion in living organs/organisms; advanced research applications. — Spring Semester 2013

°**MECH 658 03(3-0-0). Advanced Combustion Theory and Modeling.** S. Prerequisite: MECH 558. — Spring Semester 2013

A symptotic structure of flames, limit phenomena and multi-phase combustion.

Major Changes to Curricula

College of Engineering
Department of Civil and Environmental Engineering — **Effective Spring 2013**
Major in Civil Engineering
Soil and Water Resource Engineering Concentration

(The entire program is shown. Deletions are in ~~strikeout~~; additions are in underline.)

Course	Title	Cr	AUCC
FRESHMAN			
CIVE 102	Introduction: Civil/Environmental Engineering	3	
CIVE 103[P]	Civil Engineering Graphics and Computing	3	
CO 150[P]	College Composition	3	1A
MATH 160[P]	Calculus for Physical Scientists I	4	1B
MATH 161[P]	Calculus for Physical Scientists II	4	1B
PH 141[P]	Physics for Scientists and Engineers I	5	3A
PH 142[P]	Physics for Scientists and Engineers II	5	3A
	Arts/humanities[1]	3	3B
	Social/behavioral sciences[2]	3	3C
	Additional Requirements for Graduation[7]	0	
	TOTAL	33	

Course	Title	Cr	AUCC
SOPHOMORE			
CHEM 111[P]	General Chemistry I	4	3A
CHEM 112[P]	General Chemistry Laboratory II	1	3A
CHEM 113[P]	General Chemistry II	3	
CIVE 202[P]	Numerical Modeling and Risk Analysis	3	
CIVE 203[P]	Engineering Systems and Decision Analysis	3	
CIVE 260[P]	Engineering Mechanics-Statics	3	
CIVE 261[P]	Engineering Mechanics-Dynamics	3	
CIVE 360[P]	Mechanics of Solids	3	
MATH 261[P]	Calculus for Physical Scientists III	4	
MECH 237[P]	Introduction to Thermal Sciences	3	
	Arts and humanities[1]	3	3B
	Additional Requirements for Graduation[7]	0	
	TOTAL	33	
JUNIOR			
CIVE 300[P]	Fluid Mechanics	43	
CIVE 301[P]	Fluid Mechanics Laboratory	1	
CIVE 302[P]	Evaluation of Civil Engineering Materials	3	
CIVE 303[P]	Infrastructure and Transportation Systems	3	
CIVE 322[P]/ ENVE 322[P]	Basic Hydrology	3	
CIVE 367[P]	Structural Analysis	3	
CIVE 355[P]	Introduction to Geotechnical Engineering	43	
CIVE 356[P]	Geotechnical Engineering Laboratory	1	
ECE 204[P]	Introduction to Electrical Engineering	3	
MATH 340[P]	Introduction to Ordinary Differential Equations	4	4A, 4B
SOCR 240[P]	Introductory Soil Science	4	
	Additional Requirements for Graduation[7]	0	
	TOTAL	31	
SENIOR			
CIVE 401[P]	Hydraulic Engineering	3	
CIVE 402[P]	Senior Design Principles	3	
CIVE 403[P]	Senior Project Design	3	4C
CIVE 425[P]	Soil and Water Engineering	3	
CIVE 440[P]	Nonpoint Source Pollution	3	
SOCR 420[P]	Crop and Soil Management Systems I	3	
	Advanced Writing[3]	3	2
	Global and cultural awareness[4]	3	3E
	Historical perspectives[5]	3	3D
	Technical electives[6]	6	
	Additional Requirements for Graduation[7]	0	
	TOTAL	33	

PROGRAM TOTAL = 130 credits

[P] This course has at least one prerequisite. Check the Courses of Instruction section of the catalog or *http://catalog.colostate.edu/* to see the course prerequisites.

[1] Select two courses from departmental list of those in category 3B in the All-University Core Curriculum (AUCC). Only 3 of the 6 credits required for arts and humanities may come from intermediate (L* 200 and L* 201) foreign language courses.

[2] Select from departmental list of courses from those in category 3C in the AUCC.

[3] Select from departmental list of courses from those in category 2 in the AUCC.

[4] Select from departmental list of courses from those in category 3E in the AUCC.

[5] Select from departmental list of courses from those in category 3D in the AUCC.

[6] Select from departmental list of permissible technical elective courses.

[7] Students are required to participate in the Professional Learning Institute (PLI) program as a requirement for graduation. The program consists of eleven PLI workshops distributed by focus areas as follows: Global and Cultural Diversity (2 workshops), Innovation (2 workshops), Leadership (2 workshops), Civic and Public

Engagement (2 workshops), and Ethics (3 workshops). Each workshop is between 1-2 hours long and no outside preparation is required to attend any of the workshops. Attendance at the required workshops may be spread over the student's four-year program.

Warner College of Natural Resources
Department of Ecosystem Science and Sustainability **Effective Spring 2013**
Minor in Watershed Sciences

(The entire program is shown. Deletions are in ~~strikeout~~; additions are in underline.)

Course		Title	Cr
LOWER DIVISION			
GEOL	150	Physical Geology for Scientists and Engineers	4
		OR	
GR	210	Physical Geography	3
UPPER DIVISION			
		Select at least 10 credits from the following:	
AREC	342	Water law, Policy, and Institutions	3
ATS	350	Introduction to Weather and Climate	2
CIVE ENVE	322[P]/ 322[P]	Basic Hydrology	3
CIVE	413[P]	Environmental River Mechanics	3
CIVE	423[P]	Groundwater Engineering	3
CIVE	440[P]	Nonpoint Source Pollution	3
GEOL	452[P]	Hydrogeology	4
GEOL	454[P]	Geomorphology	4
SOCR	322[P]	Principles of Microclimatology	3
SOCR	470[P]	Soil Physics	3
SOCR	471[P]	Soil Physics Laboratory	1
SOC	461[P]	Water, Society and Environment	3
WR	406[P]	Seasonal Snow Environments	3
WR	417[P]	Watershed Measurements	3
WR	418[P]	Land Use and Water Quality	3
WR	419[P]	Water Quality Laboratory for Wildland Managers	2
WR	474[P]	Snow Hydrology	3
GR	342	Geography of Water Resources	3
WR	304	Principles of Watershed Management	3
WR	416[P]	Land Use Hydrology	3
WR	420[P]	Watershed Field Practicum	2
		TOTAL	18

PROGRAM TOTAL = 21-22 credits without prerequisites

[P] This course has at least one prerequisite. Check the Courses of Instruction section of the catalog or *http://catalog.colostate.edu/* to see the course prerequisites.

Request to Provide Planned Leave for Undergraduates

A request by the Office of the Registrar to provide a means for undergraduate students to take an approved semester planned leave by creating in ARIES a noncredit course similar to continuous registration for graduate students was approved. The recommended effective date, subject to approval by Faculty Council, is Fall Semester 2013.

Request to Move the Fire and Emergency Services Administration Major

A request from the Warner College of Natural Resources to move the administration of the Fire and Emergency Services Administration major from the School of Education in the College of Applied Human Sciences to the Department of Forest and Rangeland Stewardship in the College of Natural Resources was approved. The recommended effective date is Spring Semester 2013.

CURRICULAR REQUESTS – SEPTEMBER 21, 2012

° Course is offered for term specified in odd numbered years.
* Course is offered for term specified in even-numbered years.
+Course requires field trips.
NT, offered as a nontraditional course.
NT-B, offered as a nontraditional, blended course.
NT-C, offered as nontraditional, correspondence course.
NT-T/V, offered as nontraditional, telecourse or video/DVD course.
NT-O, offered as nontraditional, online course.

The following curricular requests were approved.

New Courses — Effective Date

+FTEC 422 02(1-2-0). Brewing Analysis and Quality Control. S. Prerequisite: FTEC 460. Required field trips. — Spring Semester 2014
Assessment, quantification, and control of various aspects of commercial beer production.

°FTEC 430 02(1-2-0). Sensory Evaluation of Fermented Products. S. Prerequisite: FSHN 301 or FTEC 210. — Spring Semester 2015
Application of sensory evaluation techniques to the study of fermented foods.

FTEC 492 02(1-0-1). Seminar: Fermentation Science & Technology. F. Prerequisite: FTEC 460; FTEC 465. — Fall Semester 2014
Capstone seminar in fermentation science and technology.

***FTEC 496A-B 01(0-0-1). Group Study in Fermentation Science.** S. Prerequisite: FSHN 350 or FTEC 360. — Spring Semester 2014
A) Current issues in fermentation science. B) Functional foods for health.

SOCR 571 02(2-0-0). Foundations of Soil Science. S. Prerequisite: SOCR 240. — Spring Semester 2013
Importance of soils in ecology and earth system science with regard to the study and management of the soil resource.

Major Change to Courses — Effective Date

ANEQ 359 02(0-4-0). Equine Sales Management II, **change to:** — Spring Semester 2013

ANEQ 359 02(0-4-0). Equine Sales Production. S. Prerequisite: ANEQ 358 or written consent of instructor.
Emphasizes skills necessary to host and evaluate an equine sale.

CS 540 04(3-3-0). Artificial Intelligence, **change to:** — Spring Semester 2013

CS 540 04(3-3-0). Artificial Intelligence. S. Prerequisite: CS 440.
Knowledge representation and reasoning, search, planning, evolutionary computation, data mining, information retrieval, intelligent Web, agent systems. (NT-V)

JTC 660 03(3-0-0). Communication in Technology Transfer, **change to:** — Spring Semester 2013

JTC 660 03(3-0-0). Communication and innovation. F. Prerequisite: JTC 501 or concurrent registration.
Communication's role in the process of innovation as well as the diffusion of new technologies, products, ideas, behaviors and attitudes.

New Curricula

College of Applied Human Sciences
Department of Food Science and Human Nutrition **Effective Fall 2013**
Major in Fermentation Science and Technology

(The entire program is shown.)

Course	Title	Cr	AUCC
FRESHMAN			
	Select four credits from the following courses:		
BZ 110	Principles of Animal Biology	3	3A
BZ 111[P]	Animal Biology Laboratory	1	3A
	OR		
LIFE 102[P]	Attributes of Living Systems	4	3A
	Select one set from following:		
CHEM 107[P]	Fundamentals of Chemistry	4	3A
CHEM 108[P]	Fundamentals of Chemistry Laboratory	1	3A
	OR		
CHEM 111[P]	General Chemistry I	4	3A
CHEM 112[P]	General Chemistry Laboratory I	1	3A
CHEM 113[P]	General Chemistry II	3	
CO 150[P]	College Composition	3	1A
FSHN 150	Survey of Human Nutrition	3	
MATH 117[P]	College Algebra in Context I	1	1B
MATH 118[P]	College Algebra in Context II	1	1B
MATH 124[P]	Logarithmic and Exponential Function	1	1B
MATH 125[P]	Numerical Trigonometry	1	1B
SOC 100	General Sociology	3	3C
	Foundations and Perspectives[1]	6	3B, 3D, 3E
	TOTAL	28-31	
SOPHOMORE			
BUS 150	Business Computing Concepts and Applications	3	
	OR		
CS 110	Personal Computing	4	
CHEM 245[P]	Fundamentals of Organic Chemistry	4	
CHEM 246[P]	Fundamentals of Organic Chemistry Laboratory	1	
FTEC 210	Science of Food Fermentation	3	
LIFE 205	Survey of Microbial Biology	3	
LIFE 206[P]	Microbial Biology Laboratory	2	
PH 121	General Physics I	5	3A
SPCM 200	Public Speaking	3	
	Foundations and Perspectives[1]	6	3B, 3D, 3E
	TOTAL	30-31	
JUNIOR			
BC 351[P]	Principles of Biochemistry	4	
	Select one course from-the following:		
CO 300[P]	Writing Arguments	3	2
CO 301B[P]	Writing in the Disciplines-Sciences	3	2
CO 301C[P]	Writing in the Disciplines-Social Sciences	3	2
JTC 300[P]	Professional and Technical Communication	3	2
FTEC 350[P]	Fermentation Microbiology	2	4B
FTEC 360[P]	Brewing Processes	3	4A
FTEC 447[P]	Food Chemistry	2	
FTEC 460[P]	Brewing Science and Technology	3	

Course	Title	Cr	AUCC
RRM 330[P]	Alcohol Beverage Control and Management	2	
	Electives	6-10	
	TOTAL	29- 33	
SENIOR			
FTEC 400[P]	Food Safety	3	
FTEC 420[P]	Quality Assessment of Food Products	3	
FTEC 422[P]	Brewing Analysis and Quality Control	2	
	OR		
FTEC 430[P]	Sensory Evaluation of Fermented Products	2	
FTEC 440[P]	Refining and Packaging Technology	2	
FTEC 465[P]	Food Production Management	2	
FTEC 487	Internship	3	
	OR		
FTEC 495	Independent Study	3	
FTEC 492	Seminar in Fermentation Science and Technology	2	4C
FTEC 496A-B[P]	Group Study in Fermentation Topics	2	
STAT 201[P]	General Statistics	3	
	OR		
STAT 204[P]	Statistics for Business Students	3	
	Electives[2]	7	
	TOTAL	29	

PROGRAM TOTAL = 120 credits

[P] This course has at least one prerequisite. Check the Courses of Instruction section of the catalog or *http://catalog.colostate.edu/* to see the course prerequisites.

[1] Select one course each from the lists in categories 3D and 3E, and two courses from category 3B of the All-University Core Curriculum (AUCC), for a total of 12 credits. Only 3 of the 6 credits required for arts and humanities may come from intermediate (L* 200 and L* 201) foreign language courses.

[2] Enough elective credits need to be selected to bring program total to 120 credits with 42 upper-division credits.

College of Liberal Arts
Department of Anthropology **Effective Spring 2013**
Resilience of Social Ecological Systems Graduate Interdisciplinary Studies Program

(The entire program is shown.)

Course	Title	Cr
In addition to the required course, students must select one course from each of the four Groups below, A, B, C, and D, for a minimum total of 15 credits. A minimum of 9 credits must be taken at the 500-level or above. At least two courses must be from outside the student's discipline or sub-discipline. A minimum total of 15 credits is required.		
Required Course		
ANTH 530[P]	Human-Environment Interactions	3
Group A: Concepts of Cultural and Social Systems in Environmental Context		
AGRI 330/ PHIL 330	Agricultural Ethics	3
ANTH 329[P]	Cultural Change	3
ANTH 330[P]	Human Ecology	3
ANTH 376[P]	Evolution of Human Adaptation	3
ANTH 415	Indigenous Ecologies and the Modern World	3
ANTH 446[P]	New Orleans and the Caribbean	3
ANTH 529[P]	Anthropology and Sustainable Development	3
GR 320[P]	Cultural Geography	3
HIST 470[P]	World Environmental History, 1500-Present	3

Course	Title	Cr
POLS 670[P]	Politics of Environment and Sustainability	3
SOC 667[P]	Theories of State, Economy, and Society	3
SOC 668[P]	Environmental Sociology	3
Group B: Concepts and Methods of Ecology and People		
AGRI 500	Advanced Issues in Agriculture	3
AGRI 562[P]/ SOC 562[P]	Sociology of Food Systems and Agriculture	3
ANTH 330/ PHIL 330	Agricultural Ethics	3
ANTH 453[P]	Impacts on Ancient Environments	3
ANTH 515[P]	Culture and Environment	3
ANTH 572[P]	Human Origins	3
ANTH 573[P]	Paleoclimate and Human Evolution	3
BZ 353[P]/ NR 353[P]	Global Change Ecology, Impacts, and Mitigation	3
RS 351[P]	Wildland Ecosystems in a Changing World	3
Group C: Concepts and Methods of Governance and Economy		
ANTH 529[P]	Anthropology and Sustainable Development	3
AREC 340[P]/ ECON 340[P]	Introduction: Economics of Natural Resources	3
AREC 460[P]	Economics of World Agriculture	3
AREC 478[P]	Agricultural Policy	3
AREC 540[P]/ ECON 540[P]	Economics of Natural Resources	3
AREC 541[P]/ ECON 541[P]	Environmental Economics	3
NR 320	Natural Resources History and Policy	3
NR 622[P]	Analysis of Environmental Impact	3
NR 625[P]	Community-Based Natural Resource	3
POLS 362[P]	Global Environmental Politics	3
POLS 532[P]	Governance of the World Political Economy	3
POLS 670[P]	Politics of Environment and Sustainability	3
POLS 739[P]	International Environmental Politics	3
Group D: Skills and Methods		
ANTH 352[P]	Geoarchaeology	3
ANTH 441[P]	Method in Cultural Anthropology	3
ANTH 443[P]	Ethnographic Field Preparation	3
ANTH 461[P]	Anthropological Report Preparation	3
ANTH 544[P]	Anthropological Method and Theory	3
GR 323/ NR 323	Remote Sensing and Image Interpretation	3
GR 410[P]	Climate Change: Science, Policy, Implications	3
GR 420[P]	Spatial Analysis with GIS	4
GR 503/ NR 503	Remote Sensing and Image Analysis	4
NR 575[P]	Systems Ecology	4
PROGRAM TOTAL = minimum 15 credits		

[P] This course has at least one prerequisite. Check the Courses of Instruction section of the catalog or http://catalog.colostate.edu/ to see the course prerequisites.

Major Changes to Curricula

Warner College of Natural Resources
Department of Ecosystem Science and Sustainability **Effective Spring 2013**
Major in Watershed Science

(The entire program is shown. Deletions are in ~~strikeout~~; additions are in underline.)

Course	Title	Cr	AUCC
FRESHMAN			
	Select one of the following:		
AGRI 140	Technology in Agriculture	3	
BUS 150	Business Computing Concepts and Applications	3	
CS 110	Personal Computing	4	
~~BZ 104~~	~~Basic Concepts of Plant Life~~	~~3~~	~~3A~~
	Select one of the following for 4 credits:		
BZ 110	Principles of Animal Biology	3	3A
BZ 111[P]	Animal Biology Laboratory	1	3A
	OR		
BZ 120	Principles of Plant Biology	4	3A
	OR		
LIFE 102	Attributes of Living Systems	4	3A
	OR		
LIFE 103[P]	Biology of Organisms-Animals and Plants[1]	4	
	Select one pair from the following:		
CHEM 107[P]	Fundamentals of Chemistry	4	3A
CHEM 108[P]	Fundamentals of Chemistry Laboratory	1	3A
	OR		
CHEM 111[P]	General Chemistry I	4	3A
CHEM 112[P]	General Chemistry Laboratory I	1	3A
CO 150[P]	College Composition	3	1A
ESS 130[P]	System Theory and Information Management	1	
	Select one of the following:		
GEOL 120	Exploring Earth: Physical Geology	3	3A
GEOL 122	The Blue Planet: Geology of Our Environment	3	3A
GEOL 124	Geology of Natural Resources	3	3A
GEOL 150	Physical Geology for Scientists and Engineers	4	
	~~**OR**~~		
~~GR 210~~	~~Physical Geography[2]~~	~~3~~	
~~MATH 124[P]~~	~~Logarithmic and Exponential Function~~	~~1~~	~~1B~~
~~MATH 125[P]~~	~~Numerical Trigonometry~~	~~1~~	~~1B~~
~~MATH 126[P]~~	~~Analytical Trigonometry~~	~~1~~	~~1B~~
MATH 155[P]	Calculus for Biological Scientists I	4	1B
	OR		
MATH 160[P]	Calculus for Physical Scientists I	4	1B
	Arts and Humanities[2]	3	3B
	Global and Cultural Awareness[3]	3	3E
	~~Social/behavioral sciences~~	~~3~~	~~3C~~
	~~Elective~~	~~2~~	
	TOTAL	~~26-28~~ 29-31	
SOPHOMORE			
~~CO 301A-D[P]~~	~~Writing in the Disciplines~~	~~3~~	~~2B~~
	~~**OR**~~		
~~JTC 300[P]~~	~~Professional and Technical Communication~~	~~3~~	~~2B~~
~~NR 220[P]~~	~~Natural Resources Ecology and Measurements~~	~~5~~	
ESS 211[P]	Foundations in Ecosystem Science	3	
	OR		
LIFE 320[P]	Ecology	3	

Course	Title	Cr	AUCC
GR 210	Physical Geography	3	
MATH 161[P]	Calculus for Physical Scientists II	4	1B
	OR		
MATH 255[P]	Calculus for Biological Scientists II	4	1B
NR 322	Introduction to Geographic Information Systems	4	
PH 141[P]	Physics for Scientists and Engineers I	5	3A
SOCR 240[P]	Introductory Soil Science	4	
~~SPCM 200~~	~~Public Speaking~~	~~3~~	~~2A~~
STAT 301[P]	Introduction to Statistical Methods	3	
	OR		
STAT 315[P]	Statistics for Engineers and Scientists	3	
	Arts and Humanities	3	3B
	~~Global and cultural awareness[4]~~	~~3~~	~~3E~~
	~~Historical perspectives[5]~~	~~3~~	~~3D~~
	TOTAL	~~33~~ 29	
SUMMER			
NR 220[P]	Natural Resources Ecology and Measurements	5	
	TOTAL	5	
JUNIOR			
AREC 342	Water Law, Policy, and Institutions	3	
	Select one of the following:		
CO 301B[P]	Writing in the Disciplines: Sciences	3	2
JTC 300[P]	Professional and Technical Communication	3	2
LB 300[P]	Specialized Professional Writing	3	2
ESS 330[P]	Quantitative Reasoning for Ecosystem Science	3	
~~GR 342~~	~~Geography of Water Resources[2]~~	~~3~~	
SOCR 322[P]	Principles of Microclimatology	3	
	OR		
WR 474[P]	Snow Hydrology	3	
SOCR 470[P]	Soil Physics	3	
SOCR 471[P]	Soil Physics Laboratory	1	
WR 304	Principles of Watershed Management	3	3A
~~WR 416[P]~~	~~Land Use Hydrology[2]~~	~~3~~	~~4B~~
~~WR 417[P]~~	~~Watershed Measurements[2]~~	~~3~~	
WR 418[P]	Land Use and Water Quality[2]	3	
WR 419[P]	Water Quality Laboratory for Wildland Managers	2	
~~WR 420[P]~~	~~Watershed Field Practicum~~	~~2~~	
~~WR 474[P]~~	~~Snow Hydrology~~	~~3~~	
	~~Arts/humanities[6]~~	~~6~~	~~3B~~
	Social and Behavioral Sciences[5]	3	3C
	Watershed Science Course Selection[6]	3	
	~~Electives[7]~~	~~3~~	
	TOTAL	~~31~~ 30	
SENIOR			
	~~*Select two courses from the following:*~~		
~~CIVE 322[P]/ ENVE 322[P]~~	~~Basic Hydrology[2]~~	~~3~~	
~~CIVE 413[P]~~	~~Environmental River Mechanics~~	~~3~~	
~~GEOL 454[P]~~	~~Geomorphology~~	~~4~~	
~~SOCR 440~~	~~Pedology~~	~~4~~	
~~WR 406[P]~~	~~Seasonal Snow Environments~~	~~3~~	
~~GEOL 452[P]~~	~~Hydrogeology~~	~~4~~	
~~NR 322~~	~~Introduction to Geographic Information Systems~~	~~4~~	
~~SOCR 470[P]~~	~~Soil Physics~~	~~3~~	
~~SOCR 471[P]~~	~~Soil Physics Laboratory~~	~~1~~	
WR 416[P]	Land Use Hydrology[4]	3	4B
WR 417[P]	Watershed Measurements[4]	3	

Course		Title	Cr	AUCC
WR	440[P]	Watershed Problem Analysis	3	4A, 4B, 4C
WR	486[P]	Watershed Field Practicum	2	
		Watershed Science Course Selection[6]	6	
		Historical Perspectives[7]	3	3D
		Electives[87]	~~5-9~~ 5-7	
		TOTAL	~~28-30~~ 25-27	

PROGRAM TOTAL = 120 credits

[P] This course has at least one prerequisite. Check the Courses of Instruction section of the catalog or *http://catalog.colostate.edu/* to see the course prerequisites.

[1] In order to take this course, students may need to obtain a registration override from the appropriate department.

[2] Select from the list of courses in category 3B in the All-University Core Curriculum (AUCC). Only 3 of the 6 credits required for arts and humanities may come from intermediate (L* 200 and L* 201) foreign language courses.

[3] Select from the list of courses in category 3E in the AUCC.

~~[42]~~ Partially satisfies requirements of the Water Resources Interdisciplinary Studies Program. (Refer to CSU Catalog.)

~~[53]~~ Select from the list of courses in category 3C in the All-University Core Curriculum (AUCC).

[6] Select courses not taken elsewhere in the program from the Watershed Science Course Selection department list, for a program minimum total of 12 credits.

~~[4] Select from the list of courses in category 3E in the AUCC.~~

~~[75]~~ Select from the list of courses in category 3D in the AUCC.

~~[6] Select two courses from the list of courses in category 3B in the AUCC. Only 3 of the 6 credits required for arts and humanities may come from intermediate (L* 200 and L* 201) foreign language courses.~~

~~[87]~~ ~~Consult with adviser.~~ Select elective courses in consultation with advisor.

WATERSHED SCIENCE COURSE SELECTION

Course		Title	Cr	AUCC
Earth Sciences				
ATS	350	Introduction to Weather and Climate	3	
ATS	351[P]	Introduction to Weather and Climate Laboratory*	1	
CIVE	322[P]/	Basic Hydrology	3	
ENVE	322[P]			
CIVE	413[P]	Environmental River Mechanics	3	
CIVE	425[P]	Soil and Water Engineering	3	
CIVE	440[P]	Nonpoint Source Pollution	3	
GEOL	452[P]	Hydrogeology	4	
GEOL	454[P]	Geomorphology	4	
GR	323/	Remote Sensing and Image Interpretation	3	
NR	323			
NR	422[P]	GIS Applications in Natural Resource Management	4	
SOCR	322[P]	Principles of Microclimatology	3	
SOCR	440	Pedology	4	
WR	474	Snow Hydrology	3	
Ecology				
BSPM	445[P]	Aquatic Insects	4	
BZ	440[P]	Plant Physiology	3	
BZ	441[P]	Plant Physiology Laboratory*	1	
BZ	471[P]	Stream Biology and Ecology	3	
BZ	472[P]	Stream Biology and Ecology Laboratory*	1	
BZ	474[P]	Limnology	3	
CIVE	330[P]	Ecological Engineering	3	
ESS	311[P]	Ecosystem Ecology	3	

WATERSHED SCIENCE COURSE SELECTION

Course		Title	Cr	AUCC
ESS	411[P]	Earth Systems Ecology†	3	
RS	478[P]	Ecological Restoration†	3	
Sustainability				
AREC	442[P]	Water Resource Economics†	3	
ESS	400[P]	Sustainability and Ecosystem Science†	4	
NRRT	330	Social Aspects of natural Resource Management	3	
NRRT	362[P]	Environmental Conflict Management†	3	
SOC	461[P]	Water, Society, and Environment†	3	

* This laboratory course requires taking its respective lecture course as a prerequisite or corequisite.
† This course has at least one prerequisite not included in the Watershed Science program of study.

Warner College of Natural Resources **Effective Spring 2013**
Conservation Biology Interdisciplinary Minor

(The entire program is shown. Deletions are in ~~strikeout~~; additions are in underline.)

Course		Title	Cr
Core Curriculum			
		Select one course from the following:[1]	
BZ	220[P]	Introduction to Evolution	3
BZ	350[P]	Molecular and General Genetics	4
SOCR	330[P]	Principles of Genetics	3
LIFE	320[P]	Ecology	3
NR	300[P]	Biological Diversity	3
SOC	220	Global Environmental Issues	3
~~SOC~~	~~320[P]~~	~~Population-Natural Resources and Environment~~	~~3~~
		Select 9-10 credits from the following:[2]	
BZ	349[P]	Tropical Ecology and Evolution	3
F	310[P]	Forest and Rangeland Ecogeography	3
RS	310[P]		
F	311[P]	Forest Ecology	3
FW	400[P]	Conservation of Fish in Aquatic Ecosystems	3
FW	469[P]	Conservation in Management of Large Mammals	4
FW	477[P]	Habitat for Wildlife	3
HIST	355[P]	American Environmental History	3
NR	353[P]	Global Change Ecology, Impacts and Mitigation	3
NR	440	Land Use Planning	3
NR	460[P]	Wilderness Management	3
PHIL	345[P]	Environmental Ethics	3
POLS	361[P]	U.S. Environmental Politics and Policy	3
RS	300[P]	Rangeland Conservation and Stewardship	3
~~RS~~	~~331[P]~~	~~Rangeland Ecogeography~~	~~3~~
RS	351[P]	Wildland Ecosystems in a Changing World	3

PROGRAM TOTAL = minimum of 21 credits*

[P] This course has at least one prerequisite. Check the Courses of Instruction section of the catalog or *http://catalog.colostate.edu/* to see the course prerequisites.
* Additional course work may be required because of prerequisites.
[1] Select one of the courses listed or any other genetics or evolution course.
[2] Select enough credits to bring program total to a minimum of 21 credits, of which a minimum of 12 must be upper division.

All-University Core Curriculum (AUCC)

Category 4

A request by the Department of Food Science and Human Nutrition to include FTEC 492, Seminar: Fermentation Science and Technology, in category 4C of the AUCC for the major in Fermentation Science and Technology was approved. The recommended effective date, subject to approval by Faculty Council, is Fall Semester 2014.

CURRICULAR REQUESTS – SEPTEMBER 28, 2012

+Course requires field trips.
NT-O, offered as nontraditional, online course.

The following curricular requests were approved.

New Courses — Effective Date

CIS 570 03(3-0-0). Business Intelligence. F, S, SS. Prerequisite: Admission to M.S. Business Administration (MSBA) program. — Spring Semester 2013
Harnessing vast data stores to solve problems, enhance decision-making, discover new business opportunities, and to derive additional benefits. (NT-O)

[Approved as a new course and a new non-traditional course]

CIS 575 03(3-0-0). Applied Data Mining and Analytics in Business. F, S, SS. Prerequisite: STAT 204. — Spring Semester 2013
Data mining is a process of selecting, exploring and modeling large amounts of data to identify patterns and relationships among key variables. (NT-O)

[Approved as a new course and a new non-traditional course]

CIS 670 03(3-0-0). Advanced IT Project Management. F, S, SS. Prerequisite: CIS 600. — Spring Semester 2013
Advanced tools, techniques and skills for advanced risk management, change movement, and performance/control measures in cross-functional projects. (NT-O)

[Approved as a new course and a new non-traditional course]

MGT 665 02(2-0-0). Supply Chain Development and Management. S. Prerequisite: Written consent of instructor. — Spring Semester 2013
This course teaches the development and management of the global supply chain that plans, sources, makes and delivers an organization's products. (NT-O)

[Approved as a new course and a new non-traditional course]

WR 512 (03(0-0-3). Water Law for Non-Lawyers. S. Prerequisite: Written consent of instructor; graduate standing. — Spring Semester 2013
Basics of water law and policy for Colorado, western states, and the U.S. (NT-O)

[Approved a new non-traditional online course.]

Major Change to Courses — Effective Date

BUS 669 03(3-0-0). Sustainable Enterprise Funding and Evaluation, **change to:** — Spring Semester 2013

BUS 669 03(3-0-0). Sustainable Enterprise Funding and Evaluation. F, S. Prerequisite: Written consent of instructor.
Funding sustainable enterprises. Grant writing, venture philanthropy, angel investors, and venture capital. Project development, evaluation, execution (NT-O)

[Approved as a new non-traditional course]

BUS 686 Var. Practicum, **change to:** — Spring Semester 2013

BUS 686 Var. Practicum. F, S, SS. Prerequisite: Written consent of instructor. (NT-O)

[Approved as a new non-traditional course]

+GEOL 364 04(3-3-0). Igneous and Metamorphic Petrology, **change to:** Spring Semester 2013

+GEOL 364 04(3-3-0). Igneous and Metamorphic Petrology. S. Prerequisite: GEOL 232, with a grade of C- or better.
Identification, classification, geochemistry, petrogenesis of igneous and metamorphic rocks; textural interpretation of hand samples and thin sections. Required field trips.

CIVE 549 03(3-0-0). Drainage and Wetlands Engineering, **change to:** Spring Semester 2013

CIVE 549 03(3-0-0). Drainage and Wetland Engineering. S. Prerequisite: CIVE 425 or CIVE 322/ENVE 322. (NT-O)
Drainage and wetlands design for agricultural and natural resource applications. Water table modification for nonpoint sources pollution control.

[Approved as a new non-traditional course]

CS 540 04(3-3-0). Artificial Intelligence, **change to:** Spring Semester 2013

CS 540 04(3-3-0). Artificial Intelligence. S. Prerequisite: CS 440.
Knowledge representation and reasoning, search, planning, evolutionary computation, data mining, information retrieval, intelligent Web, agent systems. (NT-0)

[Approved as a new non-traditional course]

MGT 667 03(3-0-0). Global Social Sustainable Entrepreneurship, **change to:** Spring Semester 2013

MGT 667 03(3-0-0). Global Social Sustainable Entrepreneurship. F, S. Prerequisite: Written consent of instructor.
Global challenges-poverty, environmental degradation, public health, agriculture. Role of entrepreneurial management in private and public. (NT-O)

[Approved as a new non-traditional course]

MGT 668 03(3-0-0). New Venture Development for Social Enterprise, **change to:** Spring Semester 2013

MGT 668 03(3-0-0). New Venture Development for Social Enterprise. F, S. Prerequisite: Written consent of instructor.
Early stages of a new venture, including creation of business plan. Additional study of social entrepreneurship and sustainable business strategies. (NT-O)

[Approved as a new non-traditional course]

Major Changes to Curricula

College of Business
Master of Business Administration **Effective Spring 2013**
Specialization in Global Social and Sustainable Enterprise

(The entire program is shown. Deletions are in ~~strikeout~~; additions are in underline.)

Course		Title	Cr
FIRST YEAR			
Semester 1, Fall (14 credits)			
ACT	501[P]	Accounting for Global Sustainable Enterprise	3
BUS	690A-H[P]	Contemporary Issues in Business	~~2~~1
CIS	600[P]	Information Technology and Project Management	3
MGT	667[P]	Global Social Sustainable Entrepreneurship	3
MKT	601[P]	Marketing for Social Sustainable Enterprises	3
Semester 2, Spring (12 credits)			
~~BUS~~	~~505[P]~~	~~Legal and Ethical Environment of Business~~	~~3~~
BUS	601[P]	Quantitative Business Analysis	2
BUS	690A-H[P]	Contemporary Issues in Business	~~1~~2
FIN	601[P]	Financial Management and Markets	3
MGT	665[P]	Supply Chain Development and Management	2
MGT	668[P]	New Venture Development for Social Enterprise	3
Summer Session (3 credits)			
BUS	686[P]	Practicum	3
		OR	
BUS	687[P]	Internship	3
SECOND YEAR			
Semester 3, Fall (11 credits)			
BUS	505[P]	Legal and Ethical Environment of Business	3
BUS	669[P]	Sustainable Enterprise Funding and Evaluation	3
BUS	690A-H[P]	Workshop-Contemporary Issues in Business	3
~~BUS~~	~~690A-H[P]~~	~~Workshop-Contemporary Issues in Business~~	~~2~~
MGT	612[P]	Managing in a Global Context	3

Minimum Total Credits for Program = 40 credits

[P] This course has at least one prerequisite. Check the Courses of Instruction section of the catalog at http://catalog.colostate.edu/ to see the course prerequisites.

CURRICULAR REQUESTS – OCTOBER 5, 2012

NT-O, offered as nontraditional, online course.

The following curricular requests were approved.

New Courses	Effective Date
ANEQ 328 03(3-0-0). Foundations in Animal Genetics. S. Prerequisite: ANEQ 101 or ANEQ 102; LIFE 102. Foundational information of the influence of the genome and its genes on qualitative and quantitative traits in animal populations.	Spring Semester 2013
AREC 224 01(0-0-1). Introduction to Agribusiness Entrepreneurship. S. Prerequisite: AREC 202 or (ECON 202 or concurrent registration). Introductory exposure to entrepreneurship for agribusinesses through presentations by industry professionals.	Spring Semester 2013
AREC/REL 452 02(2-0-0). Real Estate Appraisal Principles. S. Prerequisite: AREC 202 or ECON 202; AREC 305 or REL 360. Credit not allowed for both AREC 452 and REL 452. Theoretical principles that underlie real estate appraisal methods. (NT-O) [Approved as a new traditional course and a new non-traditional course.]	Spring Semester 2013
AREC/REL 453 02(2-0-0). Real Estate Appraisal Practices. S. Prerequisite: AREC or REL 452. Credit not allowed for both AREC 453 and REL 453. Procedures and Practices used in real estate appraisal. (NT-O) [Approved as a new traditional course and a new non-traditional course.]	Spring Semester 2013
CON 464 03(1-0-2). Construction Leadership. S. Prerequisite: CON 365; CON 367 or concurrent registration; written consent of instructor. Leading projects and people in a construction business and application of skills in a construction-based community service learning project.	Spring Semester 2013
CON 477 03(3-0-0). Residential Aging-in-Place and Green Building. S. Prerequisite: CON 265. Aging-in-place and green building aspects of the residential construction market.	Spring Semester 2013
ESS 495 Var. 1-6. Independent Study in Ecosystem Science. F, S, SS. Prerequisite: none.	Spring Semester 2013
ESS 587 Var. 1-6. Internship. F, S. Prerequisite: none.	Spring Semester 2013
ESS 692 01(0-0-1). Seminar. F, S. Prerequisite: none.	Spring Semester 2013
FSHN 512 03(0-0-3). Nutritional Aspects of Oncology. S. Prerequisite: Enrolled in the GPIdea Online M.S. in Dietetics. Offered as an online course only through the Division of Continuing Education. Relationships between nutrition and cancer including the role of nutrition in specific cancers, cancer prevention and patient management. (NT-O) [Approved as a new non-traditional online course only.]	Spring Semester 2013

REL/AREC 452 02(2-0-0). Real Estate Appraisal Principles. S. Prerequisite: AREC 202 or ECON 202; AREC 305 or REL 360. Credit not allowed for both REL 452 and AREC 452. Spring Semester 2013

Theoretical principles that underlie real estate appraisal methods. (NT-O)

[Approved as a new course and a new non-traditional course.]

REL/AREC 453 02(2-0-0). Real Estate Appraisal Practices. S. Prerequisite: AREC/REL 452. Credit not allowed for both REL 453 and AREC 453. Spring Semester 2013

Procedures and Practices used in real estate appraisal. (NT-O)

[Approved as a new course and a new non-traditional course.]

Major Change to Courses	**Effective Date**
ANEQ 487 Var. Internship, **change to:**	Spring Semester 2013

ANEQ 487A-B Var. Internship. F, S, SS. Prerequisite: Written consent of instructor. Maximum of 6 credits allowed in course.

A) Animal. B) Equine.

AREC 375 03(3-0-0). Agricultural Law, **change to:** Spring Semester 2013

AREC 375 03(3-0-0). Agricultural Law. F, S. Prerequisite: Junior standing.

Laws, regulations, case decisions affecting ranching and farming in the Rocky Mountain area. (NT-O)

[Approved as a new non-traditional course]

AREC 415 03(3-0-0). International Agricultural Trade, **change to:** Spring Semester 2013

AREC 415 03(3-0-0). International Agricultural Trade. F. Prerequisite: AREC 310, ECON 204.

Agricultural trade patterns and institutions; trade theory with applications to agriculture. Current issues in agricultural trade. (NT-O)

[Approved as a new non-traditional course]

BC 411 04(3-0-1). Physical Biochemistry, **change to:** Spring Semester 2013

BC 411 04(3-0-1). Physical Biochemistry. F. Prerequisite: BC 401 or (BC 351 with a grade of B or better); CHEM 113; MATH 161 or MATH 255.

Thermodynamics; reaction rates quantum chemistry; spectroscopy; macromoleular folding and interactions; ligand binding; enzyme kinetics; membranes.

Date: October 22, 2012

To: Tim Gallagher, Chair
Executive Committee/Faculty Council

From: David Greene, Chair
Committee on Responsibilities and Standing of Academic Faculty

Subject: Proposed Revisions to the *Manual,* Section E.10.4.1.2 - Extension of the Probationary Period

The Committee on Responsibilities and Standing of Academic Faculty moves that the Faculty Council adopt the proposed revisions to the *Manual,* Section E.10.4.1.2 – Extension of the Probationary Period to be effective upon approval by the Board of Governors of the Colorado State University System as follows:

Additions - Underlined Deletions - ~~Overscored~~

E.10.4.1.2 Extension of the Probationary Period

The use of Family Medical Leave may lead to an automatic extension of the probationary period (see Appendix 3 for details).

A faculty member may request an extension of the probationary period as described below. The faculty member must make the request for an extension of the probationary period in writing to the departmental tenure committee. Such a request should be made as early as possible, and must be made prior to the first day of the final academic year of the probationary period. The recommendation of the tenure committee shall be forwarded successively to the department head, the college dean, and the Provost, each of whom shall recommend either acceptance or rejection of the recommendation of the tenure committee. Such recommendations shall not be made in an arbitrary, capricious, or discriminatory manner. The final decision on such an extension shall be made by the President. If the faculty member making the request is dissatisfied with a rejection at any level of a positive recommendation by the tenure committee, he or she has the right to appeal through formal grievance procedures.

a. A faculty member may request an extension of the probationary period due to exceptional circumstances, including, but not limited to, ~~childbirth~~ birth or adoption of a child, personal health issues, and care of immediate family members (this is separate from the issue of leaves, which are addressed in Section E.10.4.1.2.c). The tenure committee may recommend up to two (2) separate extensions of the probationary period, each for a period not to exceed one (1) year.

b. A faculty member may request an extension of the probationary period under the Americans with Disabilities Act (ADA). Such a request must identify the nature of the disability and explain why an extension of the probationary period is necessary for purposes of reasonable accommodation. The faculty member requesting such an extension also must provide evidence of protected status under ADA to the Director of the Office of Equal Opportunity (OEO), who shall determine the validity of the protected status and inform the departmental tenure committee. The tenure committee may recommend an extension of the probationary period for a period not to exceed one (1) year (see Sections E.6.b and E.4). Any subsequent request to the tenure committee for an additional extension shall require reverification of the protected status by the OEO Director.

c. Any leave for a period not exceeding one (1) year shall normally count as part of the probationary period. However, if the leave is of such a nature that the individual's development as a faculty member while on leave cannot be judged, or if the leave is for purposes that are not scholarly, the faculty member may request that the leave not count as part of the probationary period.

d. If a faculty member has been granted credit for prior service, thus reducing the probationary period, then, if circumstances warrant, the faculty member may request that this credit for prior service be reduced, thus extending the probationary period.

Rationale: This change adds adoption to the list of circumstances.

28

Date: October 8, 2012

To: Tim Gallagher, Chair
Executive Committee/Faculty Council

From: David Greene, Chair
Committee on Responsibilities and Standing of Academic Faculty

Subject: Proposed Revisions to the *Manual*, Section E.14 – Performance Reviews

The Committee on Responsibilities and Standing of Academic Faculty moves that the Faculty Council adopt the proposed revisions to the *Manual,* Section E.14 – Performance Reviews, to be effective upon approval by the Board of Governors as follows:

Additions underlined, Deletions ~~overscored~~

E.14 Performance Reviews *(~~last revised August 12, 2009~~)*

All faculty members, including department heads and deans, are subject to performance reviews. These reviews include annual reviews, comprehensive reviews of tenure-track faculty members, and comprehensive reviews of tenured faculty members. Annual reviews and comprehensive reviews of tenured faculty members shall be conducted by the academic supervisor for the faculty member's academic unit. For a faculty member who is not a department head, a dean, an associate dean or an assistant dean, the academic unit is his or her home department, and the academic supervisor is the department head. For a department head, an associate dean, or an assistant dean, the academic unit is the college, and the academic supervisor is the dean of that college. For a dean, the academic unit is the University, and the academic supervisor is the Provost.

Nothing contained in this section shall be construed to affect the at-will status of administrative appointments. The evaluation of an individual's performance as an administrator and fit within a specific administrative organizational structure is separate from the review processes described in this section.

Performance reviews are intended ~~to assist faculty in achieving tenure or promotion~~ to facilitate continued professional development, to refocus professional efforts when appropriate, ~~and~~ to assure that faculty members are meeting their obligations to the University, and to assist faculty in achieving tenure or promotion. These reviews must be conducted in such a way that they are consistent with academic freedom, due process, the tenure system, ~~academic freedom, due process,~~ and other protected rights. It is also appropriate for performance reviews to document problems with behavior (see Section D.9 and also Section E.15).

A performance review must take into account the individual faculty member's effort distribution (see Section E.9.1) and the individual faculty member's workload (see Section E.9.2), and it must consider each area of responsibility. Furthermore, effort distributions should be established so as to best utilize the individual talents of all ~~tenured~~ faculty members, because having similar assignments for all faculty members in a department often is not the most effective use of resources. ~~Tenured~~ Ffaculty members should have the opportunity to work with the ~~department head~~ academic supervisor to adjust their professional responsibilities throughout their careers in a way that permits them to meet both institutional and individual goals.

For each performance review~~, the faculty member shall be assigned a numerical performance rating by the Provost. In addition~~, a written report shall be prepared by the academic supervisor, and this report shall identify strengths and any deficiencies in the faculty member's performance. The faculty member shall be given a copy of this report, and he or she shall then have ten (10) working days to prepare a written response to this report if he or she desires to do so. The report and any written response on the part of the faculty member shall be forwarded to the dean and the provost, and a copy ~~Both the report and the faculty member's response~~ shall be maintained in the faculty member's official Personnel File.[2]

Rationale: Wording has been edited to reflect that this section applies to all faculty, not only tenured and tenure-track faculty. As well, assignment of a "numerical performance rating" by the Provost has not been adhered to as a policy as it unrealistically assumes performance across all academic units can be measured identically using a numeric scale.

October 4, 2012

TO: Tim Gallagher, Chair
Executive Committee and Faculty Council

FROM: Howard Ramsdell, Chair
University Curriculum Committee

SUBJECT: New Graduate Interdisciplinary Studies Program

The University Curriculum Committee moves Faculty Council adopt the following:

A Graduate Interdisciplinary Studies Program in Resilience of Social Ecological Systems be established in the Department of Anthropology effective Spring Semester 2013.

Rationale:

According to the request submitted:

A graduate ISP in Resilience of Social Ecological Systems will allow students the opportunity to develop their environmental literacy and understanding of the framework of resilience for solving linked social-ecological problems. Graduate student demand for a new way of thinking and a holistic approach to solving critical human-environmental problems and attaining 'green' jobs has resulted in the ISP. This ISP can help students reinforce their departmental coursework and attain employment opportunities not only in academia but in such fields as non-profits, non-governmental organizations, consulting, communication, and local, state, or federal government, for example.

The program will be administered by the Department of Anthropology.

The request was reviewed and approved by the University Curriculum Committee on September 21, 2012.

Attachment

3/

APR 19 2012

UPDATED

APR 19 2012

1 of 10

NEW/MAJOR/MINOR PROGRAMS OF STUDY-CURRICULAR REQUESTS

CONTACT PLEASE PRINT: NAME Kathleen Galvin EMAIL Kathleen.galvin@colostate.edu PHONE 491.5784
(REQUIRED)

CHECK THE APPROPRIATE BOX ON THE FAR LEFT. See *Curricular Policies and Procedures Handbook*, available at http://www.colostate.edu/orgs/ucc for instructions.

ADDS

___ ADD a new department and/or college. (Complete Section I-Column B and Section II.)
X ADD a new degree or major or concentration or option or minor or interdisciplinary studies program. (Complete Section I-Column B, Section II, and Section III-Column B.)

MAJOR CHANGES

___ CHANGE the name of an existing department and/or college. (Complete Section I-Column A, only changed item(s) in Section I-Column B, and Section II.)
___ CHANGE the name of a degree or major or concentration or option or minor or interdisciplinary studies program. (Complete Section I-Column A, only changed item(s) in Section I-Column B, and Section II.)
___ CHANGE the curriculum requirements of an approved major or concentration or option or minor or interdisciplinary studies program involving a sum total of 7 or more credits. (Complete Section I-Column A, Section II, Section III-Column A, and only changed item(s) in Section III-Column B.)
___ CHANGE AUCC Category 4 requirements of an approved major or concentration. (Complete Section I-Column A, Section II, Section III-Column A, and only changed item(s) in Section III-Column B.)
___ DROP a degree or major or concentration or option or minor or interdisciplinary studies program and requirements. (Complete Section I-Column A and Section II.)

MINOR CHANGES

___ CHANGE the curriculum requirements of an approved major or concentration or option or minor or interdisciplinary studies program involving a sum total of less than 7 credits. (Complete Section I-Column A, Section II, Section III-Column A, and only changed item(s) in Section III-Column B.)
___ CHANGE courses and/or group requirements from freshman/sophomore year to junior/senior year or vice versa in an approved major or concentration or option or minor or interdisciplinary studies program. (Complete Section I-Column A, Section II, Section III-Column A, and only changed item(s) in Section III-Column B.)

SECTION I

A. PRESENT NAME	B. REQUESTED NAME
	COLLEGE
	DEPARTMENT
	MAJOR
	UNDERGRADUATE CONCENTRATION/ GRADUATE SPECIALIZATION
	OPTION
	MINOR
	INTERDISCIPLINARY STUDIES PROGRAM Resilience of Social Ecological Systems
	DEGREE

EFFECTIVE DATE (TERM AND YEAR) REQUESTED ~~SPY2011~~ Spring 2013

SECTION II-JUSTIFICATION FOR REQUEST

A graduate ISP in Resilience of Social Ecological Systems will allow students from the Anthropology Department and across campus the opportunity to develop their environmental literacy and understanding of the framework of resilience for solving linked social – ecological problems. Graduate student demand for a new way of thinking and a holistic approach to solving critical human-environmental problems and attaining 'green' jobs has resulted in the ISP. This ISP can help students reinforce their departmental coursework and attain employment opportunities not only in academia but in such fields as non-profits, non-governmental organizations, consulting, communications, and local, state or federal government, for example.

SECTION III (SEE PG. 2)

SECTION IV-SIGNATURES OF AFFECTED DEPARTMENTS (SEE PG. 3)

CHANNELS FOR APPROVAL	DATE
Department Head/ Chairperson*	
Chairperson, College Curriculum Committee	
Dean of College*	

*Signature indicates approval and a commitment of resources.

CURRICULUM & CATALOG USE	Approval Date
Comm. On Scholarship, Research, and Graduate Education (CoSRGE)	
University Curriculum Committee	
Faculty Council	
Approved Effective Date	

UPDATED
APR 19 2012
24/10

SECTION III-LISTING OF CURRICULUM REQUIREMENTS

A. LIST COMPLETE CURRENT REQUIREMENTS (Please contact Curriculum and Catalc	B. EITHER LIST COMPLETE NEW PROGRAM OR ONLY PROPOSED CHANGES (CHANGES, DROPS, AND ADDS). (For examples, see Appendices in the *Curricular Policies and Procedures Handbook.*) INCLUDE: Course prefix, number, title, and number of credits. Note superscript "P" after course number if course has a prerequisite.

FIRST YEAR CREDITS

CREDITS

Required Course
ANTH 530[P] Human Environment Interactions 3

Group A. Concepts of cultural and social systems in environmental context[1]

ANTH 330[P] Ecological Anthropology 3
ANTH 329[P] Cultural Change 3
ANTH 529[P] Anthropology and Sustainable Development 3
GR 320[P] Cultural Geography 3
ANTH 376[P] Evolution of Human Adaptation 3
ANTH 415 Indigenous Ecologies and the Modern World 3
HIST 470[P] World Environmental History, 1500-Present 3
SOC 668[P] Environmental Sociology 3
SOC 667[P] Theories of State, Economy and Society 3
ANTH 446[P] New Orleans and the Caribbean
POLS 670 Politics of Environment and Sustainability 3
PHIL 330/AGRI 330 Agricultural Ethics 3

Group B. Concepts and methods of ecology and people[1]

ANTH 453[P] Impacts on Ancient Environments 3
ANTH 515 Culture and Environment 3
ANTH 573 Paleoclimate and Human Evolution 3
ANTH 572 Human Origins 3
NR 353/BZ353[P] Global Change Ecology, Impacts and Mitigation 3
RS 351[P] Wildland Ecosystems in a Changing World 3
AGRI 500 Advanced Issues in Agriculture 3
AGRI 562/SOC 562[P] Sociology of Food Systems and Agriculture 3

Group C. Concepts and methods of governance and economy[1]

ANTH 529[P] Anthropology and Sustainable Development 3
ECON340/AREC340[P] Natural Resource Economics 3
ECON 540/AREC540[P] Economics of Natural Resources 3
ECON 541/AREC541[P] Environmental Economics 3
NR 320 Natural Resources History and Policy 3
NR 622[P] Analysis of Environmental Impacts 3
POLS 362[P] Global Environmental Politics 3
POLS 532[P] Governance of the World Political Economy 3
POLS 739[P] International Environmental Politics
POLS 670[P] Politics of Environment and Sustainability 3
NR 625[P] Community-based Natural Resource Management 3
AREC 460[P] Economics of World Agriculture 3
AREC 478[P] Agricultural Policy 3

Group D. Skills and methods[1]

ANTH 352[P] Geoarchaeology 3
ANTH 441[P] Methods in Cultural Anthropology 3
ANTH 461[P] Anthropological Report Preparation 3
ANTH 443[P] Ethnographic Field Preparation 3
ANTH 544[P] Anthropological Method and Theory 3
GR 410 Climate Change: Science, Policy, Implications 3
GR 323/NR323 Remote Sensing and Image Interpretation 3
GR 420 Spatial Analysis with GIS 3
GR503/NR503 Remote Sensing and Image Analysis 3
NR575[P] Systems Ecology: An Introduction to Methods of Ecological Modeling 3

1. One course must be taken from each of the Groups A, B, C and D. At least 9 credits must be at the 500 level or higher. Students must take 2 courses out of their discipline or sub-discipline. Total credits must equal 15, one course from each category plus ANTH530.

3 of 10

UPDATE

APR 19 2012

SECTION IV – SIGNATURES OF AFFECTED DEPARTMENTS
(Required before consideration by University Curriculum Committee)

Affected departments include any department outside the home department, whose course is used in the program. Affected departments might also include other departments offering a program with similar or overlapping content.

This proposal for a curricular change or addition of a program of study has been reviewed and agreed to by the following departments affected by the changes.

Signature	Department	Date
	Sociology	4-19-12
	Philosophy	4/19/12
	Ag & Res Economics	4/19/12
	College of Ag	20 April 2012

~~3 of 9~~
4 of 10

SECTION IV – SIGNATURES OF AFFECTED DEPARTMENTS
(Required before consideration by University Curriculum Committee)

Affected departments include any department outside the home department, whose course is used in the program. Affected departments might also include other departments offering a program with similar or overlapping content.

This proposal for a curricular change or addition of a program of study has been reviewed and agreed to by the following departments affected by the changes.

Signature	Department	Date
Diane C. Margolf	HISTORY	9/23/10
John R Brouillette	Sociology	9-22-10
	FRWS	10/1/10
	AREC	11/14/11

35

4 of 9
5 & 10

SECTION IV – SIGNATURES OF AFFECTED DEPARTMENTS
(Required before consideration by University Curriculum Committee)

Affected departments include any department outside the home department, whose course is used in the program. Affected departments might also include other departments offering a program with similar or overlapping content.

This proposal for a curricular change or addition of a program of study has been reviewed and agreed to by the following departments affected by the changes.

Signature	Department	Date
	Economics	11/18/2010
Signature	Department	Date
Signature	Department	Date
Signature	Department	Date

Anthropology Department

Graduate Interdisciplinary Studies Program (ISP)

RESILIENCE of Social-Ecological Systems

Total 15 credits (5 classes)

Rationale: Human societies, past, present, and future, are the major drivers of global environmental change. The planet has long been dominated by human actions. Thus we must rely on human agency to create sustainable solutions for the near and long term. Scholarship has come to recognize that ecological and social systems are coupled and that human interactions dominate causing change in unpredictable and non-linear ways. This means that tools and methods developed within a framework of stability are ill-suited to address present and future concerns. It is no surprise then that "the survival of social-ecological systems has … become increasingly dependent o*n the resilience of their social dynamics in contrast to their purely biophysical dynamics"* (Young et al. 2006:306).

Rapid changes due to climatic, economic, social and cultural processes affect many people and places where local policies and action have little influence, creating a disconnect in global-local feedbacks and interactions. These causes of change have major impacts in both the biophysical and human dimensions. Resilience is defined as the capacity of a social-ecological system to absorb disturbance and to reorganize, while undergoing change so as to retain essentially the same function, structure, identity and feedbacks. In this context adaptation is the ability of individuals or groups to respond to changes in their environment. We address these numerous aspects of social and ecological systems. This ISP specifically addresses the transdisciplinary challenges of social-ecological issues and is a collaborative effort between various departments.

A graduate ISP in Resilience of Social Ecological Systems will allow students from the Anthropology Department and across campus the opportunity to develop their environmental literacy and understanding of the framework of resilience for solving linked social – ecological problems. Graduate student demand for a new way of thinking and a holistic approach to solving critical human-environmental problems and attaining 'green' jobs has resulted in the ISP. This ISP can help students reinforce their departmental coursework and attain employment opportunities not only in academia but in such fields as non-profits, non-governmental organizations, consulting, communications, and local, state or federal government, for example.

Required course: Students will be able to think in a holistic way about the dynamics of coupled social-ecological systems (3 credits)

ANTH 530 Human Environment Interactions

Students must take one course from each of the following four categories. At least 9 credits must be at the 500 level or above. Students must take two courses out of their discipline or sub-discipline.

A. Society: Students will understand the concepts of cultural and social systems in environmental context (minimum 3 credits)

ANTH 330 Human Ecology (will be called Ecological Anthropology)
ANTH 329 Cultural Change
ANTH 529 Anthropology and Sustainable Development
GR 320 Cultural Geography
ANTH 376 Evolution of Human Adaptation
ANTH 415 Indigenous Ecologies and the Modern World
HIST 470 World Environmental History, 1500- Present
SOC668 Environmental Sociology (Michael Carolan)
SOC 667 Theories of State, Economy and Society (Pete Taylor)
ANTH 446 New Orleans and the Caribbean
POLS 670 Politics of Environment and Sustainability
PHIL 330/AGRI 330 Agricultural Ethics

B. Environment: Students will be able to understand concepts and methods of ecology and people (minimum 3 credits)

ANTH 453 Impacts on Ancient Environments
ANTH 515 Culture and Environment
ANTH 573 Paleoclimate and Human Evolution and Paleoclimate
ANTH 572 Human Origins
NR 353/BZ353 Global Change Ecology, Impacts and Mitigation.
ECOL 610 Ecosystem Ecology
RS 351 Wildland Ecosystems in a Changing World
AGRI 500 Advanced Issues in Agriculture
AGRI 562/SOC 562 Sociology of Food Systems and Agriculture

C. Governance/Economics: Students will be able to understand the governance and economic concepts and methods of social-ecological systems (minimum 3 credits)

ANTH 529 Anthropology and Sustainable Development
ECON 340/AREC 340 Natural Resource Economics
ECON 540/AREC540 Economics of Natural Resources.
ECON 541/AREC541 Environmental Economics
NR 320 Natural Resource History and Policy
NR 622 Analysis of Environmental Impacts
POLS 362 Global Environmental Politics
POLS 532 Governance of the World Political Economy
POLS 739 International Environmental Politics
NR625 Community-based Natural Resource Management
AREC 460 Economics of World Agriculture

AREC 478 Agricultural Policy

D. Methods: Students will be able to have the technical skills to formulate and solve problems at the appropriate scales and to recognize the interconnectedness of coupled social and environmental systems (minimum 3 credits)

ANTH 352 Geoarchaeology
ANTH 441 Methods in Cultural Anthropology
ANTH 461 Anthropological Report Preparation
ANTH 443 Ethnographic Field Preparation
ANTH 544 Anthropological Method and Theory
GR 323/NR323 Remote Sensing and Image Interpretation
GR 420 Spatial Analysis with GIS
GR 410 Climate Change: Science, Policy, Implications
GR503/NR503 Remote Sensing and Image Analysis
NR575 Systems Ecology: An Introduction to Methods of Ecological Modeling

Anthropology Department

Graduate Interdisciplinary Studies Program (ISP)

RESILIENCE of Social-Ecological Systems

Total 15 credits (5 classes)

Rationale: Human societies, past, present, and future, are the major drivers of global environmental change. The planet has long been dominated by human actions. Thus we must rely on human agency to create sustainable solutions for the near and long term. Scholarship has come to recognize that ecological and social systems are coupled and that human interactions dominate causing change in unpredictable and non-linear ways. This means that tools and methods developed within a framework of stability are ill-suited to address present and future concerns. It is no surprise then that "the survival of social-ecological systems has … become increasingly dependent o*n the resilience of their social dynamics in contrast to their purely biophysical dynamics"* (Young et al. 2006:306).

Rapid changes due to climatic, economic, social and cultural processes affect many people and places where local policies and action have little influence, creating a disconnect in global-local feedbacks and interactions. These causes of change have major impacts in both the biophysical and human dimensions. Resilience is defined as the capacity of a social-ecological system to absorb disturbance and to reorganize, while undergoing change so as to retain essentially the same function, structure, identity and feedbacks. In this context adaptation is the ability of individuals or groups to respond to changes in their environment. We address these numerous aspects of social and ecological systems. This ISP specifically addresses the transdisciplinary challenges of social-ecological issues and is a collaborative effort between various departments.

A graduate ISP in Resilience of Social Ecological Systems will allow students from the Anthropology Department and across campus the opportunity to develop their environmental literacy and understanding of the framework of resilience for solving linked social – ecological problems. Graduate student demand for a new way of thinking and a holistic approach to solving critical human-environmental problems and attaining 'green' jobs has resulted in the ISP. This ISP can help students reinforce their departmental coursework and attain employment opportunities not only in academia but in such fields as non-profits, non-governmental organizations, consulting, communications, and local, state or federal government, for example.

Required course: Students will be able to think in a holistic way about the dynamics of coupled social-ecological systems (3 credits)

ANTH 530 Human Environment Interactions

Students must take one course from each of the following four categories. At least 9 credits must be at the 500 level or above. Students must take two courses out of their discipline or sub-discipline.

A. Society: Students will understand the concepts of cultural and social systems in environmental context (minimum 3 credits)

ANTH 330 Human Ecology (will be called Ecological Anthropology)
ANTH 329 Cultural Change
ANTH 529 Anthropology and Sustainable Development
GR 320 Cultural Geography
ANTH 376 Evolution of Human Adaptation
ANTH 415 Indigenous Ecologies and the Modern World
HIST 470 World Environmental History, 1500- Present
SOC668 Environmental Sociology (Michael Carolan)
SOC 667 Theories of State, Economy and Society (Pete Taylor)
ANTH 446 New Orleans and the Caribbean
POLS 670 Politics of Environment and Sustainability
PHIL 330/AGRI 330 Agricultural Ethics

B. Environment: Students will be able to understand concepts and methods of ecology and people (minimum 3 credits)

ANTH 453 Impacts on Ancient Environments
ANTH 515 Culture and Environment
ANTH 573 Paleoclimate and Human Evolution and Paleoclimate
ANTH 572 Human Origins
NR 353/BZ353 Global Change Ecology, Impacts and Mitigation.
ECOL 610 Ecosystem Ecology
RS 351 Wildland Ecosystems in a Changing World
AGRI 500 Advanced Issues in Agriculture
AGRI 562/SOC 562 Sociology of Food Systems and Agriculture

C. Governance/Economics: Students will be able to understand the governance and economic concepts and methods of social-ecological systems (minimum 3 credits)

ANTH 529 Anthropology and Sustainable Development
ECON 340/AREC 340 Natural Resource Economics
ECON 540/AREC540 Economics of Natural Resources.
ECON 541/AREC541 Environmental Economics
NR 320 Natural Resource History and Policy
NR 622 Analysis of Environmental Impacts
POLS 362 Global Environmental Politics
POLS 532 Governance of the World Political Economy
POLS 739 International Environmental Politics
NR625 Community-based Natural Resource Management
AREC 460 Economics of World Agriculture

8 & 10
UPDATED
APR 19 2012

AREC 478 Agricultural Policy

D. Methods: Students will be able to have the technical skills to formulate and solve problems at the appropriate scales and to recognize the interconnectedness of coupled social and environmental systems (minimum 3 credits)

ANTH 352 Geoarchaeology
ANTH 441 Methods in Cultural Anthropology
ANTH 461 Anthropological Report Preparation
ANTH 443 Ethnographic Field Preparation
ANTH 544 Anthropological Method and Theory
GR 323/NR323 Remote Sensing and Image Interpretation
GR 420 Spatial Analysis with GIS
GR 410 Climate Change: Science, Policy, Implications
GR503/NR503 Remote Sensing and Image Analysis
NR575 Systems Ecology: An Introduction to Methods of Ecological Modeling

9 of 10

UPDATED

APR 19 2012

College of Liberal Arts
Department of Anthropology
Resilience of Social Ecological Systems Graduate Interdisciplinary Studies Program

Effective Spring 2013

(The entire program is shown.)

Course	Title	Cr
In addition to the required course, students must select one course from each of the four Groups below, A, B, C, and D, for a minimum total of 15 credits. A minimum of 9 credits must be taken at the 500-level or above. At least two courses must be from outside the student's discipline or sub-discipline. A minimum total of 15 credits is required.		
Required Course		
ANTH 530[P]	Human-Environment Interactions	3
Group A: Concepts of Cultural and Social Systems in Environmental Context		
AGRI 330/ PHIL 330	Agricultural Ethics	3
ANTH 329[P]	Cultural Change	3
ANTH 330[P]	Human Ecology	3
ANTH 376[P]	Evolution of Human Adaptation	3
ANTH 415	Indigenous Ecologies and the Modern World	3
ANTH 446[P]	New Orleans and the Caribbean	3
ANTH 529[P]	Anthropology and Sustainable Development	3
GR 320[P]	Cultural Geography	3
HIST 470[P]	World Environmental History, 1500-Present	3
POLS 670[P]	Politics of Environment and Sustainability	3
SOC 667[P]	Theories of State, Economy, and Society	3
SOC 668[P]	Environmental Sociology	3
Group B: Concepts and Methods of Ecology and People		
AGRI 500	Advanced Issues in Agriculture	3
AGRI 562[P]/ SOC 562[P]	Sociology of Food Systems and Agriculture	3
ANTH 330/ PHIL 330	Agricultural Ethics	3
ANTH 453[P]	Impacts on Ancient Environments	3
ANTH 515[P]	Culture and Environment	3
ANTH 572[P]	Human Origins	3
ANTH 573[P]	Paleoclimate and Human Evolution	3
BZ 353[P]/ NR 353[P]	Global Change Ecology, Impacts, and Mitigation	3
RS 351[P]	Wildland Ecosystems in a Changing World	3
Group C: Concepts and Methods of Governance and Economy		
ANTH 529[P]	Anthropology and Sustainable Development	3
AREC 340[P]/ ECON 340[P]	Introduction: Economics of Natural Resources	3
AREC 460[P]	Economics of World Agriculture	3
AREC 478[P]	Agricultural Policy	3
AREC 540[P]/ ECON 540[P]	Economics of Natural Resources	3
AREC 541[P]/ ECON 541[P]	Environmental Economics	3

UPDATED APR 13 2012

Course	Title	Cr
NR 320	Natural Resources History and Policy	3
NR 622[P]	Analysis of Environmental Impact	3
NR 625[P]	Community-Based Natural Resource	3
POLS 362[P]	Global Environmental Politics	3
POLS 532[P]	Governance of the World Political Economy	3
POLS 670[P]	Politics of Environment and Sustainability	3
POLS 739[P]	International Environmental Politics	3
Group D: Skills and Methods		
ANTH 352[P]	Geoarchaeology	3
ANTH 441[P]	Method in Cultural Anthropology	3
ANTH 443[P]	Ethnographic Field Preparation	3
ANTH 461[P]	Anthropological Report Preparation	3
ANTH 544[P]	Anthropological Method and Theory	3
GR 323/ NR 323	Remote Sensing and Image Interpretation	3
GR 410[P]	Climate Change: Science, Policy, Implications	3
GR 420[P]	Spatial Analysis with GIS	4
GR 503/ NR 503	Remote Sensing and Image Analysis	4
NR 575[P]	Systems Ecology	4
PROGRAM TOTAL = minimum 15 credits		

[P] This course has at least one prerequisite. Check the Courses of Instruction section of the catalog or http://catalog.colostate.edu/ to see the course prerequisites.

October 4, 2012

TO: Tim Gallagher, Chair
Executive Committee and Faculty Council

FROM: Howard Ramsdell, Chair
University Curriculum Committee

SUBJECT: Request for new major in Fermentation Science and Technology, B.S.

The University Curriculum Committee moves Faculty Council adopt the following:

A new major in Fermentation Science and Technology (B.S.) be established effective Fall Semester 2013.

Rationale:

According to the Phase II proposal submitted:

Colorado State University would be the first university in the Rocky Mountain Region, and one of only three in the United States, to provide an academic program of undergraduate study related to the science of food and beverage fermentation. This program would be designed to prepare students for employment in the rapidly expanding interface of functional food and human health. This program meets the immediate needs of the beer, wine, dairy, soy foods, and baking industries for the next generation of skilled workforce with translational knowledge, skills, attitudes and experience. It also provides an excellent opportunity to expand our reach to all fermentation products such as yogurt, cheese, breads, fermented vegetable products such as sauerkraut and tempeh, processed meats such as sausage, fermented fruits and vegetables for wines, and fermented grain products such as beers and ales. The steady enrollment in the current brewing science and enology courses and the availability of job opportunities in these food and beverage industries are indicators that this program will appeal to many students.

The program will be administered by the Department of Food Science and Human Nutrition.

The request was reviewed and approved by the University Curriculum Committee on September 21, 2012.

Attachments

Bachelor of Science Degree in Fermentation Science
Department of Food Science & Human Nutrition
College of Applied Human Sciences

PHASE 1

1. ***Brief Overview of Proposed Program:***

- **Name of Major/Program**: Fermentation Science
- **Degree type**: Bachelor of Science
- **Department/School**: Food Science & Human Nutrition
- **College**: Applied Human Sciences; Agricultural Sciences
- **Expected total number of students enrolled in program** (five years post-implementation)
  150-200 students, 30-40 graduates per year

Summary of Program and Rationale

Preservation of food products by fermentation has been a part of culinary history long before the science, safety, and nutritional attributes of fermented food and beverages were fully understood (McGovern, et al., 2004). The availability and diversity of fermented products, including cheese, bread, yogurt, kefir, pickles, sauerkraut, meat, soy products, beer, and wine has increased in recent years and consumer interest in this area is continuing to grow. It is increasingly clear that fermented food products can favorably alter the microbiota within the human gut, which has implications for food safety and can impact risk for a variety of chronic and inflammatory diseases, including heart disease, diabetes, obesity, and cancer (Musso et al., 2010). Given the strength of the FSHN faculty devoted to chronic disease prevention, the addition of expertise in this area of fermentation science and health provides an outstanding interface with other faculty within the department.

Through the Functional Foods and Probiotics Graduate specialization currently offered in the Department of Food Science and Human Nutrition, the *Brewing Science and Technology* course, FTEC 460, and enology coursework in the Department of Horticulture and Landscape Architecture, CSU is establishing a reputation in this unique area of science. With a national focus on improved food safety, this is an excellent time to develop a degree program in the science that harnesses the activities of microorganisms for beneficial results. In addition, studies of specific fermented foods and beverages have revealed significant benefits such as improved shelf life and safety of products (van Boekel, et al., 2010), probiotic and prebiotic availability (Stanton, 2005), improved nutrient bioavailability (Poutanen, et al., 2009), anticancer properties (McGovern, et al., 2010), and improved sensory properties (Guizani and Mothershaw, 2007).

Understanding the processes and learning the methods involved in the production of fermented foods and beverages requires a unique set of knowledge and skills. Well-educated professionals are needed in fermentation science to meet the growing demands of industry. Colorado State University has provided valuable support for the food, brewing and wine industries, and is in an excellent position to move forward and assume a key role in providing the education needed for our graduates to be successful in this growing area of science and production.

Cited References:

Guizani, N., Mothershaw, A. (2007). Fermentation as a Method for Food Preservation in Handbook of Food Preservation. M. Rahman, ed. CRC Press. Boca Raton, FL.

McGovern, P. E., Christofidou-Solomidou, M., Wang, W., Dukes, F., Davidson, T., & El-Deiry, W. S. (2010). Anticancer activity of botanical compounds in ancient fermented beverages (Review). *International Journal of Oncology, 37*(1), 5-14.

McGovern, P. E., Zhang, J., Tang, J., Zhang, Z., Hall, G. R., Moreau, R. A., et al. (2004). Fermented beverages of pre- and proto-historic China. *Proceedings of the National Academy of Sciences of the United States of America, 101*(51), 17593-17598.

Musso, G. et al. (2010). Obesity, Diabetes, and Gut Microbiota: The hygiene hypothesis expanded. *Diabetes Care* 33:2277-84.

Poutanen, K., Flander, L., & Katina, K. (2009). Sourdough and cereal fermentation in a nutritional perspective. *Food Microbiology, 26*(7), 693-699.

Stanton, C., Ross, R. P., Fitzgerald, G. F., & Van Sinderen, D. (2005). Fermented functional foods based on probiotics and their biogenic metabolites. *Current Opinion in Biotechnology, 16*(2), 198-203.

van Boekel, M., Fogliano, V., Pellegrini, N., Stanton, C., Scholz, G., Lalljie, S., et al. (2010). A review on the beneficial aspects of food processing. *Molecular Nutrition and Food Research*, n/a-n/a. doi: 10.1002/mnfr.200900608.

2. *(A.) Fit with CSU Role and Mission*

Supporting the University Mission

As the Colorado land-grant institution, Colorado State University's statutory role and mission states that it should offer a "comprehensive array of baccalaureate programs." CSU is uniquely positioned to develop a *fermentation science curriculum* that extends from agricultural production of grains, hops, dairy, meat, grapes, and other fermentable foods to table consumption of wine, bread, cheese, yogurt, beer, and ale, and to addressing consumer concerns of nutrition, health, and wellness. A few specific examples of direct support for CSU's overall mission include: 1.) developing partnerships with Colorado industries; 2.) establishment of internships that will benefit students and Colorado industry; and 3.) creation of a network between CSU and fermentation-related industries which will enhance food product development, dissemination of health-related knowledge throughout the state, and help diversify the state economy.

Objectives of the Fermentation Science Program Relative to CSU's role and mission:

A. To provide students an interdisciplinary educational experience that offers exposure to the broad range of issues affecting the production of fermented foods and beverages, along with opportunities to focus in areas of individual interest.

B. To afford opportunities for Colorado undergraduate students and attract out-of-state and out-of-country (including Canada) students who are currently unable to locally enroll in an academic undergraduate 4-year degree program in **fermentation science;** which would be valued by future career employers in the **fermented foods, brewing, and wine industries** throughout in the world.

C. To create meaningful experiences for students to bring their academic work into practice through interaction with the Colorado dairy, baking, meat processing, beer and wine industries, along with other fermented food production industries.

D. To enhance faculty research through building collaborative projects in fermentation, brewing science, and enology among faculty at CSU and at collaborating institutions (e.g., CSU-Pueblo) and with industry and partner organizations.

E. To enhance preclinical, clinical, and translational research focused on the role of fermented food products in improving human health and reducing the burden of chronic disease.

F. To ensure that the work done at CSU strengthens the food science, nutrition, and agricultural sectors as a whole through communicating research findings, working with partners to identify priority research areas, and connecting potential employers with graduates prepared to excel in all areas related to fermentation.

2. (B.) *Fit with the University's Strategic Plan*

Supporting the University Strategic Plan

A few specific examples of direct support for CSU's overall mission include:

A. Preparation of a new cadre of professionals uniquely suited to positively impact the economy and citizenry of Colorado;

B. Development of a distinctive program among peer universities;

C. Support for the stated vision of being a premier system of public higher education in the nation by offering a new focus area not currently represented in the CSU system;

D. Faculty development commensurate with university objectives.

Supporting Colorado

Colorado agriculture could benefit in multiple ways from the development of a fermentation science program, particularly the dairy, wheat, beef, pork, lamb, grape, hop, and barley industries. For example:

1. Specialty value-added meat, dairy, grain, and fruit products can improve revenue streams for small producers as well as major agricultural product processors.

2. The diversity of Colorado's specialty crop and grain industries and strong presence of craft breweries in the state provides a unique opportunity for collaboration between these two growing industries. For thousands of years, artisan brewers have made use of any fermentable ingredients that were available, palatable and did not conflict with the food supply. Production of local grain and specialty crops can help meet the growing demand by local breweries for quality raw ingredients, such as hops, wheat, barley, fruits, and vegetables and can help to improve the diversity and profitability of Colorado's agricultural community.

3. Fermentation processes can make use of imperfect agricultural commodities which otherwise would be discarded, increasing the efficiency of agricultural production. Local sourcing of lower value imperfect agricultural commodities would reduce the transportation distance associated with transporting raw ingredients and conserve non-renewable energy sources.

4. Spent hops, grains, and other adjunct by-products are produced in association with the brewing of beer. These materials are considered good sources of protein and water soluble vitamins that have been used in feeding both ruminant and monogastric animals. Most Colorado breweries have established arrangements with local growers and livestock producers to transport and utilize these by-products. Other unutilized processing by-products can be used by small-scale local producers of meat and vegetable products to enrich fields and farms. Information regarding the bioactive chemical composition of specific spent by-products may be beneficial in developing their use in livestock and farming operations, as well as use in human nutrition and medicine.

3. *Evidence of Need for the Program*

CSU would be the first university in the Rocky Mountain Region, and one of only three in the United States, to provide an academic program of undergraduate study related to the science of food and beverage fermentation. This program would be designed to prepare students for employment in the rapidly expanding interface of functional food and human health. This program meets the immediate needs of the beer, wine, dairy, soy foods, and baking industries for the next generation of skilled workforce with translational knowledge, skills, attitudes and experience. It also provides an excellent opportunity to expand our reach to all fermentation products such as yogurt, cheese, breads, fermented vegetable products such as sauerkraut and tempeh, processed meats such as sausage, fermented fruits and vegetables for wines, and fermented grain products such as beers and ales. The absence of a similar program in the Rocky Mountain region, the steady enrollment in the current brewing science and enology courses, and the availability of job opportunities in these food and beverage industries are indicators that this program will appeal to many students from Colorado, other U.S. states and Canada. Based on projected student enrollments we would expect to graduate from the major 40 students per year.

The dairy industry is very prominent in Colorado with processing of yogurt and cheese. Leprino Foods located in Denver is opening a new cheese processing plant in Greeley which will be hiring college graduates with food science degrees, for which a major in fermentation science would be especially attractive. The meat industry is also prominent in Colorado and well represented by the Animal Sciences Department and Center for Meat Safety and Quality at CSU. This industry is moving more toward further processed, value-added meat products promoting convenience and health such as fermented sausage. Also soy products are gaining popularity and Fort Collins is the home of the largest tempeh production facility in the state of Colorado.

Currently, only one CSU course, FTEC 460 *Brewing Science and Technology*, has been implemented, but numerous students who have completed this course have secured career and internship employment in the brewing industry. Employers are pleased they have had some academic fermentation science education and it enhances their résumé over job applicants without this education. As an example, the ten Fort Collins breweries are asking applicants if they have studied brewing science at CSU and some breweries are recommending that applicants enroll in the course. The proposed complete undergraduate major would attract students from Colorado, out-of-state students, as well as international students, particularly from Canada which has a growing brewing industry as well as extensive artisanal food production in baking, dairy and meat processing. The proposed undergraduate fermentation science program at CSU would be uniquely comprehensive in the United States, with similar programs found only in United Kingdom, Germany, Belgium, and Russia.

The proposed complete undergraduate major would attract students from Colorado, out-of-state students, as well as international students, particularly from Canada which has a growing brewing industry. The proposed undergraduate fermentation science program at CSU would be uniquely comprehensive in the United States, with similar programs found only in United Kingdom, Germany, Belgium, and Russia.

Craft beer production in the U.S. rose 9% by volume and 12% by retail dollars in the first half of 2010, providing an estimated 100,000 jobs in the U.S. (Brewers Association 2011). Other food processing operations utilizing fermentation in the production of their products are experiencing similar or greater growth arcs. There are considerable economic benefits derived from processed meat, dairy, fruit, soy, beer and wine production and related tourism associated with the numerous fermented food product processors located in Colorado.

4. *Evidence of Student Demand*

As evidenced by the number of undergraduate students who enrolled in FSHN 496, a special topics class focused on probiotics, functional foods, and human health, there is a growing interest in students wanting to better understand how fermented products favorably alter the gut microbial signature and prevent chronic diseases. Recent evidence suggests that gut bacteria plays a critical role in promotion or prevention of chronic diseases including obesity, type 2 diabetes, ulcerative colitis, Crohn's disease, cancer etc. It is critical to identify and characterizing the fermented foods and phytonutrients that elevate beneficial gut bacteria, while measuring biomarkers of both exposure and response in target tissues. Furthermore, knowledge about intestinal processes may offer innovative strategies for targeted fermented product development. Also, food science faculty have secured federal funding (2009-2012) to determine the effects of functional food products on gut microbial signature and colonic-systemic inflammation during the obese condition, indicating growing interest in this emerging area.

Colorado is the leading brewing production state in the nation, and CSU offers one of three undergraduate academic brewing science courses in the U.S. University of California-Davis has a 2-year waiting list for applicants to enroll in their *Professional Brewing Programs in Brewing Science and Engineering*. University of Wisconsin at Madison has a newly developed brewing science course directed to microbiology majors. Oregon State University has a graduate program in brewing science. CSU's *Brewing Science & Technology* course is in its 6th year and 9th semester; enrolling 20 students per semester. This spring semester we were unable to enroll 32 qualified applicants due to the required enrollment limit of 20. The course is filled for fall semester, 2011, with 25 qualified applicants unable to enroll. The food processing industry is looking for well-educated students to fill positions to supply the expanding consumer demand for value-added fermented food products.

5. Duplication/ Similar Programs in the State

The proposed fermentation science program is unique in Colorado, as well as the United States and Canada. Although the University of California Davis does offer an undergraduate degree in Fermentation Science, it is focused on fermented beverages. To offer a complete fermentation science program with coursework and applied experience in a full range of agricultural commodities would place Colorado State University at the forefront of this booming food trend.

PHASE 2

Students

6. *Student Body*
For Undergraduate Programs:

- **What is the ideal number of students in terms of total student enrollment (after program has been in place for five years)?** 80

- **What number do you feel would be ideal for the "entering class?"** 15

- **Present a time line explaining how you expect those numbers to grow as you build toward your first graduating class.** 1st year, 15; 2nd year, +20; 3rd year, +20; 4th year, +20; = 15 graduating; 5th year, +20 = 20 graduating leaving 80 enrolled.

- **How many students do you expect to graduate in a given year once the program is at ideal size?** 20

- **Is the proposed program intended to provide another program option to a significant number of students who are already being attracted to or attending CSU? Provide explicit detail.** No. It will include applied science and technology of commercially processed food and beverages. It will apply the basic sciences of biology, microbiology, chemistry, and physics, but will not include industrial fermentations of non-food components such as pharmaceutical, biological reagents, or organic acids for non-food use. It will not attract students who are interested in career employment in the medical, pharmaceutical, or non-food chemical, microbiological, or engineering industries, nor students in any majors who are pre-med or pre-vet med. It will not attract students who would otherwise select majors not requiring advanced levels of biology, chemistry, or microbiology. Agricultural Science majors are largely food production oriented in their interests, and this proposed major is largely food processing oriented.

- If the program is expected to attract students from other campus departments, attach a letter from the relevant department head and dean indicating their support (or lack thereof) for the new proposal in terms of shift of student enrollment from that particular department. **The proposed program is not expected to attract a significant number of students from any other campus departments, and certainly not shift of student enrollment. The proposed program will prepare graduates for careers in the food processing industry, which no current programs or majors at CSU provide except Food Science in FSHN and the proposed program will add courses that would strengthen that major.**

- **Is it anticipated that the proposed program will draw students who would not otherwise come to the institution?** Yes, it will likely draw students to CSU from all U.S. states, Canada, and Europe who seek careers in the expanding fermented food and beverage industries, in their respective countries. There are currently only two academic fermentation science programs offered at state universities, one at University of California – Davis which is and undergraduate program, and one at Oregon State University which is a graduate program. University of California – Davis also has a 6-month Extension course in

brewing science which has a 2-year waiting list for students to enter, and is not part of an academic degree curriculum. There is no similar comprehensive undergraduate program in any other state to serve current and future employment needs of the rapidly expanding brewing and total fermented foods industries.

- **What is the student profile in other programs that the department currently offers (e.g, mean index score; residency compared to non-residency numbers; ethnicity of student body). Is there any reason to believe that the profile of the student body in the new program area would be any different than the existing profile?**

Yes. The new program would draw a high proportion of non-residence students from out of state and out of country. There would be no anticipated reason for change in mean index score or ethnicity of student body.

7. *Admission Requirements*

- **Are any requirements for admission to the proposed program being recommended that are higher than CSU's minimum requirements?** No. **If so, what are the recommendations? What is your rationale for the higher standards?**

Program and Assessment

8. *Course of Study*

- **List all courses comprising the program's overall curriculum. Please provide the following information for each course: course number, title, credits, prerequisite, catalog description (Please BOLD entries for any NEW courses that are being proposed as a part of this curriculum).**

Curriculum would include core and elective courses in food science, horticulture, microbiology, chemistry and physics:

- **FTEC 210 03(2-2-0) *Science of Food Fermentation*. Prerequisite: CHEM 107 or 111; LIFE 205. Science, history, culture, gastronomy, safety, health, and nutrition aspects of fermented foods and beverages.** (Student enrollment: fall semester, 25 per semester, 100 per 4 years)
- **FTEC 350 03(2-2-0) *Fermentation Microbiology*. Prerequisite: FTEC 310; MIP 334. Microorganisms involved in fermentation of foods and beverages.** (Student enrollment: spring alternate years, 50 per semester, 100 per 4 years)
- FTEC 360 03(2-2-0) *Brewing Science & Technology*. Prerequisite: CHEM 245; MATH 118; 21 years of age; completed 60 credits. Scientific and technical aspects of brewing, fermenting, finishing, and evaluating microbrewed style of lagers and ales. (Student enrollment: both fall and spring semesters, will be the introductory brewing course. 20 per semester, 160 per 4 years)
- **FTEC 330 02(1-2-0) *Malting and Mashing*. Prerequisite: MATH 118; PH 121; CHEM 245; BC 351. Biochemical and technical aspects of malting cereal grains for wort production in beer manufacturing.** (Student enrollment: fall semester, 20 per semester, 80 per 4 years)
- **FTEC 340 02(1-2-0) *Brewing and Finishing*. Prerequisite: PH 121; MATH 118; CHEM 245; BC 351. Biochemical and physical aspects of wort production and subsequent fermentation of beer.** (Student enrollment: spring semester, 20 per semester, 80 per 4 years)
- **FTEC 420 02(1-2-0) *Beer Analysis & Quality Control*. Prerequisite: FTEC 330; FTEC 340; FTEC 440; 21 years of age; completed 60 credits. Quantification and assessment of beer**

production parameters and analysis of beer quality. (Student enrollment: fall semester, 20 per semester, 80 per 4 years)

- **FTEC 430 02(1-2-0)** ***Sensory Evaluation of Fermented Products*****. Prerequisite: FTEC 310 or FSHN 301. Principles of sensory analyses and their application to fermented foods and beverages.** (Student enrollment: spring semester, 20 per semester, 80 per 4 years)
- **FTEC 440 02(1-2-0)** ***Clarification and Packaging Technology*****. Prerequisite: MATH 118; PH 121; BTEC 306; FTEC 330; FTEC 340; 21 years of age. Scientific and engineering principles of food and beverage filtration and clarification equipment; and packaging technology.** (Student enrollment: spring semester, 20 per semester, 80 per 4 years)
- **FTEC 460 02(2-0-0)** ***Food Processing Management*****. Prerequisite: FTEC 330; FTEC340. Operations and process management for food and beverage processing and production plants.** (Student enrollment: spring semester, 20 per semester, 80 per 4 years)
- FSHN 496 I 01 (1-0-0) *Group Study in Functional Foods and Probiotics*. Prerequisite: FSHN 350. (Student enrollment: spring semester, 20 per semester, 80 per 4 years)
- FSHN 496 01 (1-0-0) *Group Study in Special Fermentation Topics*. Prerequisite: FSHN 350. (Student enrollment: fall semester, 20 per semester, 80 per 4 years)
- **FTEC 492 02 (0-0-2)** ***Seminar in Fermentation Science & Technology*****. Prerequisite: Senior standing. Capstone seminar fermentation science and technology.** (Student enrollment: spring semester, 20 per semester, 80 in 4 years)

We will involve selected students having completed FTEC 360 in **brewing teaching or research projects** by enrollment in:

- FTEC 495, *Independent Study*, for variable credit. (optional)
- FSHN 484 or FSHN 684, *Supervised College Teaching*, for 3 credits. (optional)

Majors will be required to complete an internship in the commercial brewing industry for variable credit through:

- FTEC 487, *Internship*. **(Student enrollment: summer semester, 10 per year, 40 per 4 years).**

Offered concurrently on campus and through Continuing Education for non-majors will be:

- **FTEC 3xx 02(2-0-0)** ***Applied Zymurgy*****. Prerequisite: none. Fermentation related to the brewing of beer including history, business, and art of ales and lagers.** (Student enrollment: fall and spring semesters, 20 per semester, 160 per 4 years)

The following currently offered courses in horticulture will be included in the curriculum:

- HORT 277 01(1-0-0) *Introduction to Enology*. Prerequisite: none. Methods/criteria to evaluate, compare, and describe aroma and flavor characteristics in sound commercial wines; identification of common wine defects. spring semester odd years (Student enrollment: spring semester odd years, 20 per semester, 40 per 4 years)
- HORT 452 01(1-0-0) *Viticulture-Grape Production*. Prerequisite: BZ 120 or HORT 100 or LIFE 103 or SOCR 100. Grape production in temperate zone climates. (Student enrollment: fall semester odd years, 20 per semester, 40 per 4 years)
- HORT 462 03(3-0-0) *Viticulture Practices in Grape Production*. Prerequisite: none. Biology of grape vines and cultural practices including planning, training, pest control, pruning, and harvesting; special emphasis on Colorado. (Student enrollment: spring semester even years, 20 per semester, 40 per 4 years)

- HORT 477 03(3-0-0) *Enology–History and Winemaking*. Prerequisite: CHEM 107 or concurrent registration and CHEM 108 or concurrent registration or CHEM 111 or concurrent registration and CHEM 112 or concurrent registration. History and development of the wine industry; mechanics of various processes and factors affecting wine quality and consumer acceptance. **(Student enrollment: spring semester even years, 20 per semester, 40 per 4 years)**

Additional currently offered courses will be required in the curriculum:

- PH 121 05 (3-2-1) *General Physics I*. Prerequisite: MATH 125 or concurrent registration. Concepts of force, torque, energy, momentum, work used to cover fluids, waves, sound, temperature, heat; biological, physical examples (noncalculus). **(Student enrollment: Fall, Spring, Summer School, 10 per year, 80 in 4 years)**
- BC 351 04 (4-0-0) *Principles of Biochemistry*. Prerequisite: BZ 110 or BZ 120 or LIFE 102; CHEM 245 or CHEM 341 or CHEM 345. Structure and function of biological molecules; biocatalysis; metabolism and energy transduction; gene expression. **(Student enrollment: Fall, Spring, Summer School, 10 per year, 80 in 4 years)**
- FTEC 420 03 (2-2-0) *Quality Assessment of Food Products*. Prerequisite: FTEC 110; LIFE 205. Quality control of raw ingredients to manufactured products: assessment and sensory evaluation of foods. **(Student enrollment: Spring semester even years, 40 per semester, 80 in 4 years)**
- FTEC 447 02(2-0-0) *Food Chemistry*. Prerequisite: CHEM 245 or CHEM 345. Chemistry of food constituents as related to food quality and stability. **(Student enrollment: spring semester odd years, 40 per semester, 80 in 4 years)**
- MIP 334 03 (3-0-0) *Food Microbiology*. Prerequisite: LIFE 205 or MIP 300. Microorganisms in production of foods, in preservation and spoilage, and in food-borne diseases. Control of microorganisms in foods. **(Student enrollment: fall semester (20 per semester, 80 per 4 years)**
- MIP 335 02 (0-4-0) *Food Microbiology Laboratory*. Prerequisite: LIFE 206 or MIP 301 or MIP 302. MIP 334 or concurrent registration. **(Student enrollment: fall semester odd years, 40 per semester, 80 per 4 years)**
- RRM 330 02 (2-0-0) *Alcoholic Beverage Control and Management*. Prerequisite: CHEM 103 or CHEM 107. Classification, production, and service of controlled beverages; management of facilities and people; safe service training; financial controls. **(Student enrollment: spring semester (20 per semester, 80 per 4 years)**
- BTEC 306/BIOM 306 04 (3-2-0) *Bioprocess Engineering*. Prerequisite: CHEM 107 or CEM 111, PH 121 or PH 141. Material, energy balances; fluid flow, heat exchange, mass transfer; application to operations in food, fermentation, other bioprocess industries. **(Student enrollment: spring semester 20 per semester, 80 per 4 years)**
- MGT 305 03 (3-0-0) *Fundamentals of Management*. Prerequisite: none. Managerial process of planning, directing, and controlling inputs of an organization. Analysis, decision making, and survey of research literature. **(Student enrollment: fall and spring semester)**
- MGT 430 03 (3-0-0) *Leadership and Social Responsibility*. Social responsiveness of managers as they face expectations in the firm's internal and external environment. **(Student enrollment: spring semester)**

Advanced undergraduate students may enroll in the following graduate level courses:

- FTEC 576 02 (2-0-0) *Cereal Science*. Prerequisite: FTEC 447. Chemistry and functionality of cereal grain components and their importance in human nutrition. **(Student enrollment: fall semester odd years, 10 per semester, 20 per 4 years)**

- FTEC 578 03(3-0-0) *Bioactives and Probiotics for Health*. Prerequisite: CHEM 245 or CHEM 345 or FTEC 447. Bioactive food components and other phytochemicals as related to health promotion and disease prevention. **(Student enrollment: spring semester even years, 10 per semester, 20 per 4 years)**
-
- Provide a discussion of any nontraditional learning modes to be utilized in the new courses, including, but not limited to: (1) the role of technology, and (2) the use of career development activities such as practica or internships.
- **(1) All new courses will utilize currently traditional classroom technology involving PowerPoint and DVD projection, chemical and microbiological analytical equipment, and applicable fermented food processing equipment.**
- **(2) Internships with industry will be offered for credit through a currently existing course, and field trip tours of local fermented food industries will be a required part of applicable courses.**

9. *Curriculum – courses and total structure*
Include total curriculum design as discussed at University Curriculum Committee. Use the appropriate UCC forms, found on the web. Once the Phase 1 report has been approved, you may choose to submit this packet to University Curriculum Committee to get preliminary feedback as to whether they have any questions or concerns about the proposed curriculum.
Please see Appendix A for course check sheet.

10. *Assessment of Student Learning/Outcomes Evaluation*
(Please ask CSU Director of Assessment to serve as a resource for these questions)

- What specific learning outcomes will be achieved by students who complete this proposed program of study?
  - What methods will be used to assess student learning? How will student learning assessment be embedded in the curriculum? **Each course a student takes in the fermentation science major will build on previous courses lesson plans. This will create a means to assess a student's competency to utilize concepts learned in prior classes to be successful throughout the entire fermentation science program. Courses will be graded as a whole via exams, lab work, oral presentations, and research projects.**
  -
  - What specific methods or approaches will be used to assess graduate (completer) outcomes? **During a student's final semester in the program they will take a senior seminar designed to promote critical thinking and problem solving on a holistic view of the fermentation science industry. Students will design a manufacturing facility to create a fermented food product, and be expected to present the scientific and technical aspects of there facility to faculty members and peers. Upon completion of the senior seminar the student will have touched on every topic presented to them through the program.**
  - Is a licensure examination associated with this field of study? **No licensure examination is required. However the fermentation science program will give the students the means to pass the International Brewers and Distillers exam. The IBD is a highly respected competency exam coving the entire field of topics related to fermentation science.**

Students who elect to take this exam will greatly help their futures as professionals in their fields.

- How will the institution determine the extent to which the academic program meets the objectives (section 2) previously outlined? (Identify specific post-approval monitoring procedures and outcome indicators to be used.)
  - **Students will be required to participate in a summer internship between their junior and senior year. This will allow an excellent opportunity for industry members to interact with students and faculty generating a strong rapport between Colorado State University and the fermented food and beverage industries. The internship will allow a means of evaluating student progress based on employer feedback, and will help in determining the efficacy of the classes in the major. Post-graduation employment rate for fermentation science students in a fermented food/beverage production facility will be a strong indicator of the program's overall outcome. Finally, collaborative research in fermentation science between departments at CSU will utilize undergraduate students and faculty. This will be a valuable tool in monitoring the end result of an education in fermentation science from CSU.**
- How will the collected information be used to improve teaching, advising, and co-curriculum activities to enhance student learning? **Faculty teaching fermentation science will be experts in their fields. Utilizing the faculty's knowledge of subject matter and the student's evaluations of class lecture and faculty members, we will create the best learning environment capable for this unique subject. The faculty's experience and knowledge of the professional work place will also advise students on the absolute best path for each student to meet their academic and career goals.**

Faculty

11. *"Snapshot" of Faculty Resources*

• Identify current program faculty, briefly describing each faculty member's expertise/specialization. Separate regular core faculty from other departments' faculty and adjuncts.

• Summarize faculty resources using the following table

Last, First	Tenure-track/Tenured/ Special/Temp	Highest Degree Held	Area of Specialization
Avens, Jack	**Tenured**	**Ph.D.**	**Food Microbiology/Brewing/Food Safety**
Bunning, Marisa	**Tenure-track**	**Ph.D.**	**Food Safety/Food Science**
Miller, Jeffrey	**Tenure-track**	**Ph.D.**	**Hospitality Management/ Education/Food and Culture**
Stone, Martha	**Tenured**	**Ph.D.**	**Food Science/Cereal Grains**
Weir, Tiffany	**Tenure-track**	**Ph.D.**	**Gut Microbial Ecology/Fermentation of Dietary Components**
Vanamala, Jairam	**Tenure-track**	**Ph.D.**	**Bioactive Components/Probiotics**

- Estimate the number, rank, and background of new faculty members who would need to be added to initiate the proposed program in each of the first four years of the proposed program's operation (assuming the program develops as anticipated). What resource commitment is required and how will it be provided?
  One new tenure-track faculty member would be needed with expertise in brewing technology and in the area of fermentation science and fermented food products. Select courses may be taught by additional adjunct faculty members from the local brewing industry.
- Estimate the number and type of support staff needed in each of the first four years of the program. With the exception of requested GTA positions we believe that the current staffing levels will be sufficient for the first four years of the program.

12. ***Faculty Vitae***

- For a new undergraduate program, include abbreviated vitae (1-3 pages) for all tenured/tenuretrack faculty members as appendices.
- For new graduate programs, include full vitae for all tenured/tenure-track faculty members as appendices.

Vitae included in Appendix B:

Avens, J.
Bunning, M.
Miller, J.
Stone, M.
Vanamala, J.
Weir, T.

Resources

13. ***Impact of Program Request on Curriculum and Students***

- What is the current department enrollment by degree level?
  - **575 undergraduates**
  - **65 M.S. students**
  - **15 Ph.D. students**
- Are any of the department's current program areas "controlled" or "capped"?
  The HM program is enrollment controlled.
  Is the Center for Advising and Student Achievement (CASA) currently involved in advising any majors for a "seeking" category that involves any of the department's degree areas?
  Yes, CASA works with students seeking HM.
  - If approved, how will launching a new degree impact the commitment already made to students in other program areas? **No negative impact is anticipated.**
- Provide a detailed plan as to how resources within the department would be re-allocated to contribute to the resource base needed for this proposed program (e.g., will the department need to "cap" another program? Would additional enrollment growth funding be necessary to meet current student demand for courses?).

The FSHN Department has 5 Food Science faculty members whose research and teaching touch some aspect of fermentation science. This group made a conscientious decision in collaboration with the department head to focus the food science program on fermentation science. Historically, the number of food science classes in the department has been somewhat limited. With the addition (not reallocation) of a new tenure-track faculty position and two teaching assistants, the additional undergraduate courses to be offered within this proposed program will become part of the 'in load' teaching responsibilities of these faculty members, without them exceeding the normal teaching load. The additional laboratory-based experiences for these undergraduate students will be primarily the responsibility of the two graduate teaching assistants.

There will not be a need for space reallocation, as the department will acquire an additional 2100 square feet in the Gifford Building due to the relocation of the Early Childhood Center. This space has been designated for the Fermentation Science Teaching Laboratory with renovations plans currently being developed. Thus, no additional space need be reallocated within the department.

Initially, with an incoming class of 20 students when the program is implemented, there will be no need for enrollment growth funds at the outset. However, this and other issues of faculty and space issues will be revisited in future years.

- What are "collateral expenses" that must be taken into account in order to offer this academic program? (E.g., other than AUCC (core) courses, how will other department's teaching loads and facilities be affected by inclusion of their courses in the proposed curriculum. Provide a letter from other units indicating whether they would be able to "absorb" the projected number of students into already existing sections or whether they will need to add sections. If there is a need to add, can this be done with existing resources?
  With an initial class of 20 students, it is not anticipated that the program will result in any significant collateral expenses at the outset. Even with a greater than anticipated growth rate in the program, the burden on other departments will be low. We have visited with the department head of Horticulture and Landscape Architecture and the associate department head for Microbiology, Immunology, and Pathology, and both have indicated that this proposed fermentation science program would have little negative impact on their academic programs.

Graduate Assistants **(for new graduate programs only)**

- How many graduate assistants do you currently have funded on Resident Instruction funds?
- **There are 13 graduate students that are currently being paid on resident instruction funds.**
- How many do you currently have funded on external grant Funds? Other sources?
- **An additional 13 graduate students are paid out of federal or state grant funds and start-up accounts.**
- How many additional funded assistantships do you hope to have to support students in this newly proposed program? How do you propose that they will be funded? What responsibilities will these graduate assistants have? Will this affect undergraduate student access to regular faculty?

Two half-time graduate teaching assistants would work in association with the new faculty member for the first two years and be funded as part of the new faculty start-up package. Beyond the first two years it is expected that these positions will be funded with revenue generated from differential tuition dollars. GTA's would assist faculty with teaching responsibilities; however, this is not expected to affect undergraduate student access to regular faculty.

14. *Library Reference Sources:*

Note: this section must be reviewed by the Library Staff and certified by the Dean of the Libraries. Seek feedback from the Dean of the Library during Phase 1 so that work might begin on adequacy of the collection.

Describe the adequacy of student and faculty access to library and department resources (including, but not limited to, printed media, electronically published materials, videotapes, motion pictures, CDROM and online databases, and sound files) that are relevant to the proposed program (e.g., is there a recommended list of materials issued by the American Library Association of some other requirements of the recommended list?).

Consultations with the FSHN Library Liaison, Merinda McLure, resulted in the following list of suggested publications.

- JOURNAL PUBLICATIONS:
  - **Institute of Brewing and Distilling (UK)**
  - **Master Brewers Association of the Americas**
  - **American Society of Brewing Chemists**
  - **Brauwelt (Germany)**
- TEXT BOOKS:
  - **Brewing, Lewis and Young**
  - **Handbook of Brewing, Priest and Stewart**
  - **Technology Brewing and Malting, Kunze**
  - **The Practical Brewer, Master Brewers Association of the Americas**

- How much, if any, additional financial support will be required to bring access to such reference materials to an appropriate level? How is it proposed that these additional resources will be provided? The estimated annual subscription cost based on 2012 pricing with inflation adjustment is $1,629.

15. *Facilities, Equipment, and Technology*

- What unique resources (in terms of buildings, laboratories, computer hardware/software, Internet or other online access, distributed-education capability, special equipment, and/or other materials) are necessary to offer a quality program in the field?
  Fermentation lab/classroom
  New faculty lab/office renovations

- What resources for facilities, beyond those now on hand, are necessary to offer this program? Be specific (e.g., include need for new space, renovated space). Be sure to address classrooms, instructional labs, office space. etc. How is it proposed that these additional resources will be provided?
  The FSHN has been allocated existing space (~2,100 SQ FT) on the first floor of Gifford that will need to be renovated for creation of a teaching laboratory for fermentation science and area for sensory evaluation of fermented food products. We are requesting funding from Central Administration and will also work with the development office in the College of Applied Human Sciences to generate revenue through private and industry donations to fund these renovations.

- What resources for equipment, and technology, beyond those now on hand, are necessary to offer this program? How is it proposed these additional resources will be provided?
  Please refer to Appendix D for a list of equipment and other items needed for implementation of the Fermentation Science and Technology major. We expect that some of these items, particularly some of the brewing equipment, will be donated by industry supporters. We also hope that some of the equipment budget can come from Central Administration and through fundraising efforts within the College.

16. Summary of Budget Needs

Summarize all **new** budget resources you are requesting from CSU Central Administration.
As part of this section, complete the attached financial planning form.
See Appendix D

List of Appendices

Appendix A: Course check sheet
Appendix B: Faculty Vitae
Appendix C: Library Resources
Appendix D: Budget
Appendix E
Letters of Support:

Anheuser-Busch
Hospitality Institute of Technology and Management
Leprino Foods
Master Brewers Association of the Americas, Rocky Mountain District
MillerCoors
New Belgium Brewing Company
Odell Brewing Company
Noosa Yogurt

Freshman Year		Credits
Freshman Year		
BZ 110, 111 or	Principles of Animal Biology w/Lab.	4
LIFE 102	Attributes of Living Systems	(4)
CHEM 107,108 or	Fundamentals of Chemistry w/Lab.	5
CHEM 111, 112,113	General Chemistry I w/Lab., General Chemistry II	(8)
CO 150	College Composition	3
HORT 277	Introduction to Enology	1
FTEC 110	Food—From Farm to Table.	3
MATH 117	College Algebra in Context I	1
MATH 118	College Algebra in Context II	1
MATH 124	Logarithmic & Exponential Function	1
MATH 125	Numerical Trigonometry	1
SOC 100	General Sociology	3
	Foundations and Perspectives (Cat. 3-B,D,E)*	6
		29-32

Sophomore/Junior Years		Credits
Sophomore Year		
BUS 150 or	Business Computing Concepts & Applications	3
CS 110	Personal Computing	(4)
CHEM 245	Fundamentals of Organic Chemistry	4
CHEM 246	Fundamentals of Organic Chem. Laboratory	1
CO 300 or	Writing Arguments	3
CO 301B or	Writing in the Disciplines – Sciences	(3)
CO 301C or	Writing in the Disciplines – Social Sciences	(3)
JTC 300	Professional and Technical Communication	(3)
LIFE 205	Survey of Microbial Biology	3
LIFE 206	Microbial Biology Laboratory	2
PH 121	General Physics	5
SPCM 200	Public Speaking	3
	Foundations and Perspectives (Cat. 3-B,D,E)*	6
		31-32
Junior Year		
FTEC 310	Science of Food Fermentation	3
MIP 334	Food Microbiology	3
MIP 335	Food Microbiology Laboratory	2
FTEC 360	Brewing Science & Technology	3
RRM 330	Alcoholic Beverage Control and Management	2
FTEC 447	Food Chemistry	2
BC 351	Principles of Biochemistry	4
FTEC 330	Malting and Mashing	2
FTEC 340	Brewing and Finishing	2
BTEC 306	Bioprocess Engineering	4
		29

Senior Year		Credits
Senior Year		
FTEC 487	Internship	
FTEC 400	Food Safety	2- 3
FTEC 420	Quality Assessment of Food Products	3
FTEC 422	Beer Analysis & Quality Control	3
FTEC 350	Fermentation Microbiology	2
FTEC 430	Sensory Evaluation of Fermented Products	3
FTEC 440	Clarification and Packaging Technology	2
FTEC 460	Food Processing Management	2
HORT 462	Viticulture Practices in Grape Production	2

Electives & Options		Credits
Electives		
MGT 305	Fundamentals of Management	3
MGT 430	Leadership and Social Responsibility	3
MATH 126	Analytic Trigonometry	1
MATH 141 or	Calculus in Management Science	3
MATH 155	Calculus for Biological Science	(4)
RRM 400	Food & Society	3
FTEC 495	Independent Study	var.
HORT 452	Viticulture-Grape Production	1

HORT 477	Enology – History and Winemaking	3		
STAT 201	General Statistics	3		
FTEC 496 or	Group Study in Special Fermentation Topics	3		
FTEC 496 I	Group Study in Functional Foods and	1		
FTEC 492	Probiotics	(1)		
	Seminar in Fermentation Science & Technology	2		
		31-32		

1551 Busch Drive
Fort Collins, CO 80524
970 490-4500

August 20, 2012

Office of the Provost
Colorado State University
Fort Collins, CO 80523

We at *Anheuser-Busch, Fort Collins Brewery* support development of the proposed Bachelor of Science Degree in *Fermentation Science and Technology* to be offered at *Colorado State University*. Our professional brewers have been involved in teaching and have hired CSU graduates having completed the FTEC 460 *Brewing Science & Technology* course, and we are pleased to see additional course offerings in this critical area of food science. Well-educated professionals are needed in this unique area of science to meet the growing demands of the brewing industry. CSU has developed a reputation of providing valuable support for the food, brewing and wine industries, and is uniquely positioned to move forward and assume a key role in offering education that extends from agricultural production of raw ingredients to table consumption of fermented foods and beverages.

The proposed curriculum has been structured to address a deficiency in regional food science education and I understand it has been developed involving critical industry input. CSU faculty and administrators have been forward-thinking in realizing the need for the addition of this undergraduate major and the benefits to state and national fermented food and beverage industries. This degree program will help to meet the strong demand for college graduates in the Rocky Mountain region who understand the science and production techniques used in the making of fermented foods and beverages. The growth in this sector of the economy is expected to continue and the educational advancement of students in this career path is good for Colorado and good for the national fermented food and beverage industry. The impact of this proposed program will have a significant influence in this region and nationally in terms of employment of graduates.

I am pleased CSU is proposing this academic program and *Anheuser-Busch, Fort Collins Brewery* supports approval of this new undergraduate major. We look forward to continued teaching involvement in additional brewing science courses in this new undergraduate major.

Sincerely,

Kevin Fahrenkrog

Kevin Fahrenkrog
General Manager
Anheuser-Busch
970-490-4505

Leprino Foods
1830 West 38th Avenue
Denver, CO 80211-2225
303.480.2600

August 13, 2012

Office of the Provost
Colorado State University
711 Oval Drive
Fort Collins, CO 80523

I am writing to express my support for the proposed Bachelor of Science Degree in Fermentation Science and Technology to be offered at Colorado State University. Colorado needs well-educated professionals in this unique area of science to meet the growing demands of industry. CSU has developed a reputation of providing valuable support for local food industries and is uniquely positioned to move forward and assume a key role in the education of local food and beverage producers.

Leprino Foods produces cheese and a variety of nutrition ingredients that serve very specific wellness needs in Infant Nutrition, Sports Nutrition and Weight Management. The foundation of our business is cheese and from it, the other ingredients are derived. All utilize fermentation in one form or other. Fermentation and its enabling components-enzyme technology—are tremendously valuable skills that we find in quite short supply. Not only does Fermentation Science and Technology find wide application in food processing, it is equally applicable in other industry segments such as pharmaceuticals and bio-technology.

CSU faculty and administrators have been forward-thinking in realizing the need for the addition of this major and the benefits to state and national industries. This degree program will help to meet the strong demand for college graduates in our region who understand the science and production techniques used in the making of fermented foods and beverages. The growth in this sector of the economy is expected to continue and the educational advancement of students in this career path is good for Colorado and local industry. The impact of this proposed program will have a significant influence in this region and beyond in terms of employment of graduates.

In summary, Leprino Foods strongly supports CSU in the development of this new undergraduate major and would be honored to assist with the development and delivery of the relevant education.

Sincerely,

Edith Wilkin
VP/Fellow - Food Safety & Regulatory

61

NEW BELGIUM
Alternatively Empowered • Employee Owned

24 August 2012

Office of the Provost
Colorado State University
Fort Collins, CO 80523

I am supportive of the proposed Bachelor of Science Degree in Fermentation Science and Technology to be offered at Colorado State University. We are aware that college-educated professionals are needed in this unique area of science to meet the growing demands of the brewing industry. CSU has developed a reputation of providing valuable support for the food, brewing and wine industries, and *New Belgium Brewing* has contributed to and benefitted from teaching and research related to brewing at the University in Fort Collins. CSU is now ready to move forward and assume a key role in offering a complete undergraduate education program that extends from agricultural production of raw ingredients to table consumption of fermented foods and beverages as it also addresses consumer concerns of nutrition, health, and environmental conservation.

The proposed curriculum has been structured to address a deficiency in regional food science education and was developed with critical industry input. CSU faculty and administrators have been forward-thinking in realizing the need for the addition of this major and the benefits to Colorado and national food and beverage industries. This degree program will help to meet the strong demand for college graduates in the Rocky Mountain region and nationally who understand the science and production techniques used in the making of fermented foods and beverages. The growth in this sector of the economy is expected to continue as evidenced by companies expanding into other states and the educational advancement of students in this career path is good for Colorado and the national fermented food and beverage industry. The impact of this proposed undergraduate major will have a significant influence in this region and beyond in terms of employment of graduates.

I am personally supportive of CSU implementing this new academic major and *New Belgium Brewing* looks forward to continuing direct involvement in this new undergraduate program once it is approved.

Sincerely,

Kimberley Jordan

Kimberley Jordan, Co-Founder and CEO

62

ODELL BREWING CO.
FORT COLLINS, COLORADO

August 14th, 2012

Office of the Provost
Colorado State University
Fort Collins, CO 80523

I am pleased to provide this letter of support for the proposed Bachelor of Science Degree in Fermentation Science and Technology to be offered at Colorado State University. The need for well-educated professionals is increasing rapidly because of the strong interest in craft made alcoholic beverages and cheese. Odell Brewing Company has hired three CSU graduates having completed FTEC 460 *Brewing Science and Technology* and currently has another FTEC 460 student in an internship.

CSU has developed a reputation of providing valuable support for the Colorado brewing industry in terms of graduates employed by the industry and research on brewing concerns. Now CSU is uniquely positioned to move beyond a highly successful brewing science course and assume a key role in offering education that extends from agricultural production of raw ingredients to table consumption of fermented foods and beverages as it continues to address consumer concerns of nutrition and health.

The proposed curriculum has been structured to address a deficiency in regional food science education and was developed with critical industry input. CSU faculty and administrators have been forward-thinking in realizing need for the addition of this major and benefits to the Colorado and national food industry. This degree program will help meet the strong demand for college graduates in the Rocky Mountain region who understand the science and processing technology used in the making of fermented foods and beverages. The growth in this sector of the economy is expected to continue and the educational advancement of students in this career path is good for Colorado and good for local industry. The impact of this proposed program will have a significant influence in the Rocky Mountain region and nationally in terms of employment of graduates.

I am pleased CSU is proposing this academic program and *Odell Brewing Company* supports approval of this new undergraduate major at *Colorado State University*.

Sincerely,

Doug Odell

President and Founder
Odell Brewing Company
dougodell@odellbrewing.com

800 E. Lincoln Ave., Fort Collins, CO 80524
(970) 498-9070 Fax (970) 498-0706 www.odellbrewing.com

MillerCoors™

PO Box 4030
Golden, CO 80401

3939 W. Highland Blvd.
Milwaukee, WI 53208

August 21st, 2012

Office of the Provost
Colorado State University
Fort Collins, CO 80523

As MillerCoors continues our relationship with Colorado State University and other institutions we are pleased to see a Bachelor of Science Degree in Fermentation Science and Technology being created at CSU. Our own Dr. Keith Villa has presented to students enrolled in FTEC 460 Brewing Science & Technology for several semesters and additional course offerings in this area will further support industry needs and student engagement. The brewing industry and others like it will face shortages of technically trained people as demands grow and change. With two major global brewery sites, an increasing number of craft facilities and some of the best quality agricultural products in the world, competition, especially in Colorado, extends beyond products we produce; *people* are in demand as well.

Our understanding is the proposed curriculum has been structured to address a deficiency in regional food fermentation science education and developed to involve critical industry input. CSU faculty and administrators are forward-thinking in recognizing the need for this major and its future benefits to Colorado and national fermented food and beverage industries. This undergraduate degree program will help meet a strong demand for college graduates in the Rocky Mountain region who understand the science and production techniques used in a sector of the economy where growth is expected to continue. The educational preparation of students in this career path will have a significant influence beyond this as well, in terms of employment of graduates and satisfying business needs.

Malting, brewing and fermentation are critical areas of food science in need of well-educated professionals to meet growing demands of MillerCoors' industry and others like it. CSU's reputation for providing support that businesses need, uniquely positions the University to assume a key role. Offering education that extends from agricultural production of raw ingredients to table consumption of fermented foods and beverages will make this new academic program successful.

Yours sincerely,

Warren Quilliam

Warren R. D. Quilliam
Senior Director, Barley and Malt Operations & Technical Development
MillerCoors
Email warren.quilliam@millercoors.com
Mobile 720-480-0300
Office 303-277-6959

KBC Knudsen Beverage Consulting

P.O. Box 1089 • Evergreen • Colorado 80437-1089, U.S.A.
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www.KnudsenBeverageConsulting.com

To: The Office of the Provost
Colorado State University
Fort Collins, CO 80523

This letter is to offer strong support for the proposed Bachelor of Science Degree in Fermentation Science and Technology to be offered at Colorado State University. Well-educated professionals are needed in this unique area of science to meet the growing demands of industry. CSU has developed a reputation of providing valuable support for the food, brewing and wine industries, and is uniquely positioned to move forward and assume a key role in offering education that extends from agricultural production of raw ingredients to table consumption of fermented foods and beverages and also addresses consumer concerns of nutrition and health.

The proposed curriculum has been structured to address a deficiency in regional food science education and was developed with critical industry input. CSU faculty and administrators have been forward-thinking in realizing the need for the addition of this major and the benefits to state and national industries. This degree program will help to meet the strong demand for college graduates in the Rocky Mountain region, who understand the science and production techniques used in the making of fermented foods and beverages. The growth in this sector of the economy is expected to continue and the educational advancement of students in this career path is good for Colorado and good for local industry. The impact of this proposed program will have a significant influence in this region and beyond in terms of employment of graduates. This program will be helpful in case CSU will take advantage of establishing a relationship with both the Scandinavian School of Brewing and the Copenhagen University Institute of Food Science, where the Brewing Science & Technology education is located.

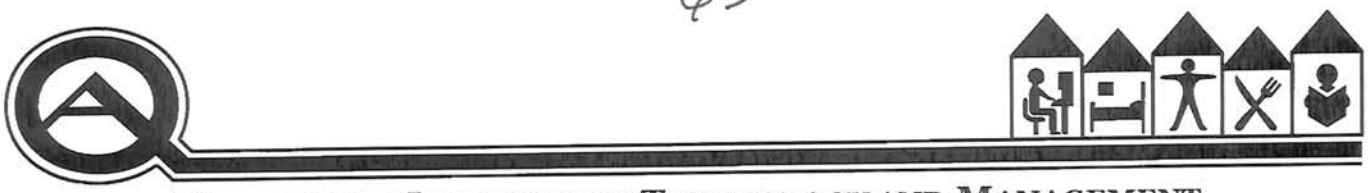
I am pleased CSU is proposing this academic program and the *Master Brewers Association of the Americas - Rocky Mountain District* supports approval of this new undergraduate major. Please feel free to contact me if you need more information or support.

With kindest regards

Finn

Finn B. Knudsen
Technical Chair

Master Brewers Association of the Americas
Rocky Mountain District



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August 10, 2012

Office of the Provost
Colorado State University
Fort Collins, CO 80523

To Whom It May Concern:

I am writing this letter in support of the proposed Bachelor of Science Degree in *Fermentation Science and Technology*, to be offered at *Colorado State University*. In my experience working with young entrepreneurs who wish to develop safe, innovative products and processes, I find that access to correct information is difficult for them, and that "grandma's favorite pickle recipe" may not only be impractical to reproduce in large quantities, but may also contain hidden hazards that only a handful of process authorities / food scientists and technologists would detect. Furthermore, recipes that require fermentation may be rejected by regulatory officials, because these processes are difficult to validate to their liking. I have personally helped a number of start-up small businesses that have struggled with these problems and have spent months under my guidance to develop a product that is safe and acceptable to regulatory officials.

My experiences and those of other process authorities have led me to firmly believe that well-educated professionals are needed in this unique area of food science to meet the growing demands of the fermented food industry. CSU has a reputation of providing valuable support for the food, brewing and wine industries, and is uniquely positioned to move forward and assume a key role in offering education that extends from agricultural production of raw ingredients to table consumption of fermented foods and beverages and also addresses consumer (and regulatory) concerns of nutrition, health, and safety.

The proposed curriculum has been structured to address a deficiency in regional food science education and was developed with critical industry input. CSU faculty and administrators have been forward-thinking in realizing the need for the addition of this major and the benefits to state and national fermented food and beverage industries. This degree program will help to meet the strong demand for college graduates in the Rocky Mountain region who understand the science and safe production techniques used in the making of fermented foods and beverages. The growth in this sector of the economy is expected to continue, and the educational advancement of students in this career path is good for Colorado and good for the national fermented food and beverage industry. The impact of this proposed program will have a significant influence in this region and beyond in terms of employment of graduates and the innovation of safe, quality fermented food and beverages by well-educated entrepreneurs.

I am pleased the CSU is proposing this academic program and my company, the *Hospitality Institute of Technology and Management*, supports approval of this new undergraduate major.

Sincerely,

O. Peter Snyder Jr.

O. Peter Snyder, Jr., Ph.D.
President / Process Authority

Date: October 17, 2012

TO: Tim Gallagher, Chair
Executive Committee and Faculty Council

FROM: Howard Ramsdell, Chair
University Curriculum Committee

SUBJECT: Proposed Addition to the *Curricular Policies and Procedures Handbook* – "Definition of Instructional Format"

The University Curriculum Committee moves that the Faculty Council adopt the proposed addition to the *Curricular Policies and Procedures Handbook* entitled "Definition of Instructional Format" as noted below to become effective upon approval by Faculty Council:

Additions – Underlined

Definition of Instructional Format

The instructional format for all credit-bearing courses shall be categorized based upon the mode(s) of interaction between students and instructors. The categories of instructional format shall be as follows:

Face to Face: Courses in which instructors interact with students in the same physical space for 75% or more of the instructional time.

Hybrid: Courses in which instructors interact with students in the same physical space for 25% or more but less than 75% of the instructional time.

Distance: Courses in which instructors interact with students in the same physical space for less than 25% of the instructional time and use one or more of the technologies listed below to deliver instruction to students who are separated from the instructor and to support regular and substantive interaction between the students and the instructor, either synchronously or asynchronously. The technologies may include—

(1) The internet;

(2) One-way and two-way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fiber optics, satellite, or wireless communications devices;

(3) Audio conferencing; or

(4) Video cassettes, DVDs, and CD–ROMs, if the cassettes, DVDs, or CD–ROMs are used in a course in conjunction with any of the technologies listed in paragraphs (1) through (3) of this definition.

Correspondence:
Courses in which instructional materials are provided to students who are separated from the instructor by mail or electronic transmission, including examinations on the materials. Interaction between the instructor and student is limited, is not regular and substantive, and is primarily initiated by the student. Correspondence courses are typically self-paced. If a course is part correspondence and part residential training, the course is considered to be a correspondence course. A correspondence course is not defined as distance education.

Instructional time:
Class meetings or their equivalent. Instructional time does not include any vacation periods, homework, or periods of orientation or counseling. Instructional time does not include study time or other time where students work independently or with other students outside of scheduled class time.

Rationale: The University's *Curriculum Policies and Procedures Handbook* needs to be updated to reflect the definitions of instructional types that have been elucidated by the U.S. Department of Education (Title 34 CFR Parts 600.2; 602.3; 668.8), the Colorado Department of Higher Education and the Higher Learning Commission. The changes are necessary to align CSU's definitions of instructional type with the requirements and guidance of these institutions and assure that CSU will continue to be accredited and its students be eligible for Federal financial aid. The current categorization of courses as "Traditional" and "Non-Traditional" does not reflect the definitions of instructional types that are now needed. The current "Non-Traditional" category includes what are now defined as "Distance" or "Correspondence" courses but does not adequately distinguish between the two. The delivery mechanisms currently defined in the "Non-Traditional" category include some that are rarely used and do not adequately identify those that have become increasingly utilized in CSU courses.

The current definitions also do not address courses that are partly "Face-to Face" and partly "Distance" or "Correspondence." The addition of the "Hybrid" category will allow proper categorization of such courses consistent with the guidance from external mandates.

It should be noted that Correspondence course credits do not count toward enrollment for financial aid purposes. Classification of existing Non-Traditional courses as Correspondence courses under the definition above may have implications for financial aid eligibility for students not otherwise meeting enrollment credit requirements. It is important that this be effectively communicated to students and that departments and the University act expeditiously to minimize any potential impacts.

This policy, to be incorporated into the *Curricular Policies and Procedure Handbook*, was approved by the University Curriculum Committee on October 16, 2012.

68

Memo

TO: Tim Gallagher, Chair, Faculty Council

FROM: Mark Zabel, Chair, Committee on Scholarship, Research and Graduate Education

DATE: October 4, 2012

RE: Revisions to the *Graduate and Professional Bulletin* – F.2.3. GRADUATE ASSISTANT SHIP – TERMS AND CONDITIONS OF APPOINTMENT - "*FINANCIAL SUPPORT*"

THE COMMITTEE ON SCHOLARSHIP, RESEARCH AND GRADUATE EDUCATION MOVE THAT FACULTY COUNCIL ADOPT THE PROPOSED REVISIONS TO THE SECTION "*FINANCIAL SUPPORT*" – F.2.3. GRADUATE ASSISTANTSHIP – TERMS AND CONDITIONS OF APPOINTMENT – OF THE *GRADUATE AND PROFESSIONAL BULLETIN* TO BE EFFECTIVE UPON FACULTY COUNCIL ADOPTION AS FOLLOWS:

ADDITIONS - UNDERLINED - DELETIONS ~~OVERSCORED~~

Full-time graduate students should not be appointed to more than a half-time assistantship or hold a sum of part-time assistantships greater than half-time. A half-time assistantship (.5 FTE) usually involves an average of about 20 hours of service per week of a nominal 40 hour workweek. Stipends will vary by department and by the duties assigned as well as the skills, competencies, and experience exhibited by the student. However, the stipend for half-time assistants, ~~those whose assignments range between 26% and 50% of a nominal forty-hour workweek~~, must be paid no less than ~~an~~ the Graduate School's officially established minimum monthly amount. Contact the Graduate School for information on the amount of this minimum for any given year. A ~~Q~~ quarter-time assistantship (.25 FTE) usually involves an average of about 10 hours of service per week of a nominal 40 hour workweek.., ~~t~~Those with such assignments ~~covering 25% or less of a nominal workweek,~~ must be paid a minimum of half of this amount. Any other level of appointment (e.g. less than 25% or between 26% and 49%) must be paid at least the prorated established minimum stipend. The level of appointment, amount of stipend and any tuition remission for each Graduate Assistant shall be as set forth on the Graduate Assistant Appointment and Certification Form.

RATIONALE:

The wording change clarifies the intent of regarding the pay for assistantships. Specifically, that student assistantships of less than 50% be prorated.