CLEMSON UNIVERSITY

# MEMORANDUM

DEAN
UNDERGRADUATE
STUDIES

Clemson University
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**TO:** Debra Jackson, Institutional Effectiveness and Assessment
Nadim Aziz, Interim Vice President for Academic Affairs and Provost
James F. Barker, President

**FROM:** Janice W. Murdoch, Chair, Undergraduate Curriculum Committee

**DATE:** September 26, 2013

**SUBJECT:** Administrative Approval of Curriculum Items

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The Undergraduate Curriculum Committee met on September 6, 2013 to approve the attached curriculum/course changes received in the Office of the Provost, September 26, 2013. The purpose of this memorandum is to respectfully request that you review this information and concur by giving final approval.

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**APPROVED:**

Debra B Jackson DATE 10/11/2013
**DR. DEBRA JACKSON, INSTITUTIONAL EFFECTIVENESS AND ASSESSMENT**

Nadim M Aziz DATE 1/18/14
**DR. NADIM AZIZ, INTERIM VICE PRESIDENT FOR ACADEMIC AFFAIRS & PROVOST**

_____ DATE _____
**JAMES F. BARKER, PRESIDENT CLEMSON UNIVERSITY**

/rft

C: File

Attachments

AGENDA

University Undergraduate Curriculum Committee Meeting

Friday—September 6, 2013—1:30 PM

E304 Martin Hall

I. Call to order

II. Introductions

III. Consideration of May meeting minutes

IV. Old Business
   A. General Education

V. New Business
   A. Update on Curriculum & Course Change System – Shannon Clark
   B. Update Music Theory AP Policy – Jeff Appling
   C. Syllabus Survey – Gail Ring
   D. Proposed Revision to the Natural Science Competency (attached)– Bob Kosinski
   E. Proposed Revision to the Cross-Cultural Awareness Competency (attached)– Mike Coggeshall

VI. Curricula/course approvals - attached

VII. Other business

VIII. Adjourn

University Undergraduate Curriculum Committee
Minutes Meeting
E304 Martin Hall
May 03, 2013, 1:30 PM

| | |
|---|---|
| **Members Present:** | Jan Murdoch, chair; Eric Touya; Cameron Bushnell for Silvestri; Angela Morgan; Kendall Kirk for Bob Kosinski; Cheryl Ingram-Smith; Mary Beth Kurz; Brian Dominy; Bob Horton; Roxanne Amerson; Maddy Thomas; Jeff Appling; Julie Pennebaker; Mary Huff; Donna Barrett; Shannon Clark; David Knox and Rhonda Todd |
| **Guests:** | Anderson Wrangle; Bob Brookover; Bob Barcelona; and Barbara Hoskins |

Murdoch convened the meeting at 1:32 PM

## Approval of minutes

The committee approved the April meeting minutes.

## New Business

A. **Proposal to Allow Approved Technical College Substitutions** – Kurtz reported that her college was in favor of keeping the current policy. The committee agreed with keeping the current policy.

B. **General Education** – Murdoch stated there were no recommendations from SACS. Bushnell distributed a handout, AAH Curriculum Notes on General Education (attached). Bushnell reported AAH has been discussing general education, and her college is concerned about funding additional courses, and understanding the problem that is to be fixed. She expressed concern about offering more courses because there is not enough money within the college to fund additional classes. Appling expressed concern about item 6, avoid allowing assessment of ePortfolio to drive curriculum; he stated that general education assessment is a SACS requirement, not a university or college requirement. The committee discussed eliminating distributed competencies and adding a general education cluster. Bushnell reported that AAH would like to suggest a minimal adjustment plan with tweaks to the existing plan to bring all departments up to the requirement. Murdoch reminded the committee that Pam Mack is playing around with the general education minor idea, suggested at the April meeting, email Pam if you have ideas on this to share. Murdoch expressed concern that many faculty who teach general education courses do not know the competencies we want the students to meet. Murdoch closed by stating further discussions will continue in the fall.

C. **Committee reports**
   a. Arts & Humanities – Bruce Whisler – The subcommittee recommendation was to deny LANG 250 and STS 215 (email attached) for AAH general education credit.
   b. Mathematical & Natural Sciences – Bob Green
   c. Social Science – Laura Olson
   d. Cross Cultural Awareness – Mike Coggeshall
   e. Science & Technology in Society – Pam Mack
   f. Ethical Judgment – Dan Wueste

g. Critical Thinking – Sarah Winslow
h. Communication – Michael LeMahieu

D. **Curriculum/course approval** – See attached. Courses not approved are highlighted in grey.

**Other Business**

Kurz brought a copy of the Minor in Sustainability for discussion. The committee reviewed the minor at the March meeting and the only concern was where the minor will be housed. Kurz agreed that the minor will be housed in CES. Committee members provided no feedback for or against the minor.

Adjourned 3:38 PM

Minutes respectfully submitted by Rhonda Todd

Rhonda Todd

| | |
|---|---|
| From: | Bruce Whisler |
| Sent: | Wednesday, May 01, 2013 10:52 AM |
| To: | Rhonda Todd |
| Cc: | Eric Touya; Joseph P Mazer |
| Subject: | Arts & Humanities Gen Ed |

Hi Rhonda:

The Arts & Humanities Gen Ed sub-committee had two courses sent for approval this spring. We have decided to deny both of them.

Lang 250 –

Denied because there were no assignments/projects to use as artifacts in the ePortfolio.

STS 215 –

Denied because the content does not have enough focus on arts and humanities.

I am sorry for not getting this to you before you made the agenda for the last UUCC meeting.

Thanks!
Bruce Whisler
Perf. Arts

# Memorandum

To: Undergraduate Curriculum Committee
Fr: AAH Curriculum Committee
Cameron Bushnell, Acting Chair
Date: April 28, 2013 (Rev 3 May, 2013)
Re: AAH Curriculum Notes on Gen Ed
(Discussion from April 17, 2013)

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The AAH Curriculum committee met April 17, 2013 in part to assemble the General Education discussions from individual departments. Two general questions underscored the discussion:

1. **What is the problem to be fixed?** The university (through the UGCC) should thoroughly discuss what it is attempting to fix in an overhaul of Gen Ed prior to any changes. That is, what is the aim of structural and/or content changes?

2. **What is the funding model for Gen Ed in the future?** In conjunction with Administration, the UGCC must consider funding of Gen Ed as part of any revision plan, including, for example, that a per-head funding model may encourage departments to more enthusiastically support and/or develop Gen Ed courses.

Ideas about revising Gen Ed fell into two general categories, new and responses to the student government plan. AAH sought to bring ideas to the table; these points are for consideration:

New:

1) **Re-evaluate the Gen Ed competency categories**, including the credit distribution; for example, is the number of credits (10) for Math/Science sufficient, too much?
2) **Consider eliminating Distributed Competencies**, specifically discuss removing Ethical Judgment from Distributed competencies, much as QEP considers taking Critical Thinking out of Distributed competencies, and making these Gen Ed competencies.
3) **Consider a Gen Ed Cluster**, a plan from Pam Mack suggesting that Gen Ed courses coalesce around three broad categories, for example, sustainability, cross-cultural awareness, and communications.
4) **Consider a Minimal Adjustment Plan** for Gen Ed; that is, tweak the existing plan by adding at the departmental level new and revised Gen Ed courses.
5) **Support Writing and Communication** as critical to any new Gen Ed plan.
6) **Avoid allowing assessment** of the E-portfolio to drive curriculum.

Response to the Student Government plan:

1) There must be more than one course, three (3) credits, from AAH in Gen Ed.
2) Some suggest that the structural changes—Academic Core *and* Gen Ed, *plus* the three-stage trajectory—are more burdensome for students than the current "Menu" option for Gen Ed.

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Minor Form**

**Add Minor:** Minor in Sustainability

**Effective Catalog Year:** 2013
**Catalog Description:** A minor in Sustainability requires 18 credits, distributed as follows: - 3 credits of CU 201 - Sustainability Leadership - 12 credits of courses that focus on sustainability issues: 315*, AP EC 457*, ARCH 370*, ARCH 471*, ARCH 472*, BE 464, BE 440, BIOSC 204*, BIOSC 313, BIOSC 441, C E 436, C E 437, E C E 420, E C E 461, ECE/ME 457, ECON 319, EE&S 486, EN SP 200, EN SP 400*, ENR 413, ENR 450*, FOR 434, GEOL 120, GEOL 270*, HIST 124*, HON 206 (Sustainable Energy Innovation), HON 206 (Experimental Forest), HORT 101, HORT 308, HORT 456, M E 420, PHIL 345*, PHYS 245, PKGSC 368*, R S 401*, WFB 313, WFB 418, WFB 430. Other courses may be submitted, through CU 201 instructor(s), for approval for inclusion on this list. - 3 credits of approved engagement activities (e.g. creative inquiries, study abroad, independent research, co-ops, capstone projects) that focus on sustainability issues. Engagement activities are approved if they meet learning objectives in the assessment plan for the minor. - At least 9 credits must be at the 300-level or higher. - At least 3 and no more than 9 credits must be from the social dimension of sustainability (indicated by * in the course list above).

**Form Originator:** LEIDYK, Leidy Klotz **Date Form Created:** 4/3/2012
**Form Last Updated by:** LEIDYK, Leidy Klotz **Date Form Last Updated:** 5/2/2013
**Form Number:** 4996

**Approval**

| | | | |
|---|---|---|---|
| Chair, Department Curriculum Committee | Date | Chair, Undergraduate Curriculum Committee | Date |
| Department Chair | Date | Chair, Graduate Curriculum Committee | Date |
| Chair, College Curriculum Committee | Date | Provost | Date |
| College Dean | Date | President | Date |

# Program Planning Summary – minor in Sustainability

Program proposal type
New minor, 18 credit hours

Proposed date of implementation
Upon approval

Justification of need for the proposed minor
Sustainability is most commonly and broadly defined as meeting the needs of the present without compromising the ability of future generations to meet their own needs. The United Nations considers sustainability "the framework for our efforts to achieve a higher quality of life for all people." While there are varying detailed definitions of sustainability, any accurate definition includes social (people), environmental (planet), and economic (prosperity) dimensions. The need for sustainability is increasingly apparent as issues such as resource shortages (e.g. energy and water), climate destabilization and widespread poverty move to the forefront of the public's consciousness.

The minor in Sustainability is needed at Clemson to:

- Meet our commitment to make sustainability part of the education for all students.
- Pursue the educational needs outlined in Clemson's sustainability plan.
- Encourage the knowledge and behavior necessary for a Net-Zero energy campus.
- Continue to attract top students, many of whom are passionate about sustainability.
- Prepare students and South Carolinians for green jobs.

Sustainability requires an understanding of issues that stretch across traditional disciplinary boundaries. Every college at Clemson has active courses related to sustainability. There are also opportunities in range of functional areas including student affairs and facilities. The challenge, and the purpose of this minor, is to coordinate these efforts for the benefit of students.

Anticipated demand and productivity
Student demand is expected to be very high based on the current activity of student groups and high enrollment in courses with sustainability themes. In a spring 2011 survey of the Clemson student body, over a quarter of students surveyed agreed that they would *major* in a sustainability-related major if one were offered at Clemson. While not a major, this minor would help meet some of this demand.

In addition, nearly 100 Clemson faculty and staff, representing every college, at least 25 departments, and functional areas including facilities, housing, and student affairs have indicated support for the ideas that are part of the minor in Sustainability.

A goal is for 100 students each year to earn the minor in Sustainability. The costs described below are based on this number. If demand is greater than this, additional resources will be needed, or we can move to a qualifications-based selection process for the minor.

Assessment of extent to which the proposed program duplicates existing programs in the state

No other programs in South Carolina are pursuing the same goal as the minor in Sustainability.

Relationship of the proposed program to existing programs at the proposing institution

The minor in Sustainability is part of the sustainability plan developed by the President's Commission on Sustainability (PCS). The minor in Sustainability will use the existing structure of the PCS and the Institute for Sustainability (IfS) to include representatives from every college and from a range of functional areas including student affairs and facilities. The minor in Sustainability's focus also complements Clemson's Restoration Institute (e.g. the Urban Ecology and Restoration chair) and newly formed Center of Economic Excellence in Sustainable Development, and their emphasis on research and public-private partnerships (e.g. the Hash Chair in sustainable development). In addition to these efforts, there are dozens of sustainability-related courses in various majors. "Sustainable environment" is one of the university's emphasis areas and researchers are active in fields from renewable energy to green building to sustainable agriculture.

Relationship of the proposed program to other institutions via inter-institutional cooperation

Through established contacts, the minor in Sustainability will benefit from input from those leading similar programs at other institutions and non-profit agencies, including Arizona State University, Penn State University and the Rocky Mountain Institute. In the longer-term, the minor in Sustainability can be a model for other regional institutions.

Curriculum and student learning outcomes

The minor in Sustainability will require 18 credits. It will begin with CU 201 course in sustainability leadership. This course includes brief coverage of the learning objectives listed below. As part of this course, students will work with the instructor to select learning objectives from this list and use these learning objectives to develop their plan for completing the minor. As part of this plan, students will select 12 credits from an approved list of existing courses. Students will also identify at least 3-credits of engagement activities. An approved list of learning objectives, courses, and engagement activities will be maintained and students/faculty can submit new courses and projects for approval by showing how they meet specific learning objectives. This flexibility is critical due to the constant additions of courses and engagement activities related to sustainability.

This curriculum is reflected in the outline below.

- CU 201 – Sustainability Leadership (3 credits)
    - By the end of the semester, students will be able to:
        - define sustainability;
        - identify and discuss fundamental issues of sustainability;
        - analyze how their values relate to sustainability, and how their actions impact sustainability issues;
        - recognize interrelated systems;
        - evaluate the role of their major in sustainability issues;
        - apply sustainability concepts on local and global scales; and
        - practice change agent skills for sustainability.
    - The goal is for students to have enough background to know where they would like to focus their efforts, and select appropriate courses, for the remainder of the minor. One deliverable is

an approved plan of study, designed by the student, for the rest of the minor based on selected class learning outcomes described in the assessment plan below.

- Selected courses from Table 1 (12 credits)
  - See Table 1 at the end of this document.
  - New courses may be added if they meet learning objectives in the assessment plan.
  - At least 9 credits must be at the 300-level or higher.
  - At least 3 and no more than 9 credits must be from the social dimension of sustainability (indicated by * in Table 1)
- Engagement activities (e.g. creative inquiries, study abroad, independent research, co-ops, capstone projects) that focus on sustainability issues (3 credits)
  - Engagement activities are approved if they meet learning objectives in the assessment plan.

Assessment plan

Students will work with the coordinator in the intro course to develop an assessment plan as part of their initial design of the minor. This assessment will be based on their selected learning outcomes from the list here. A primary measure for this assessment will be the reflection that is part of the final project as well as the actual results of this final project.

1. Scales of sustainability
   a. Define sustainability in 3 dimensions (environmental, social, economic)
   b. Apply sustainability concepts on local and global scales
   c. Integrate sustainability study and practice into the surrounding community
   d. Evaluate the history of development through mercantilism, imperialism, capitalism
   e. Assess the long term cultural and environmental impacts that shape our world today
2. Fundamental issues of sustainability
   a. Evaluate current and potential future impacts of sustainability issues including: Global climate and climate change; Food; Energy; Water; Environmental Degradation
   b. Evaluate how sustainability impacts social and intergenerational justice
3. Systems thinking for sustainability
   a. Understand basic principles of systems thinking
   b. Evaluate the role of their major in sustainability issues
   c. Recognize interrelated systems
4. Evaluate tools for implementing/measuring sustainability
   a. Evaluate the costs and benefits of sustainability (see that it is not always more expensive)
   b. Perform a Life cycle analysis and assessment
   c. Measure impacts of point source pollution prevention; and cradle-to-cradle and lean manufacturing
5. Change agents for sustainability
   a. Practice change agent skills for sustainability
   b. Practice group processes
   c. Identify and address the root of problems, even when it seems to go against the status quo or social norms
   d. Apply a new or changed mindset to your personal life

## Table 1: Minor courses and learning objectives

| Course Code | Course | 1a | 1b | 1c | 1d | 1e | 2a | 2b | 3a | 3b | 3c | 4a | 4b | 4c | 5a | 5b | 5c | 5d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AP EC 457* | Nat Res Use Tech Pol | Y | | | Y | Y | Y | Y | Y | | Y | Y | | | | Y | | |
| ARCH 370* | Design Appreciation | | | Y | Y | Y | Y | Y | | | | | | | | Y | | Y |
| ARCH 471* | History of Place | | Y | Y | Y | Y | | | | | | | | | | | Y | Y |
| ARCH 472* | Field Studies | | Y | Y | Y | Y | | | | | | | | | Y | Y | | |
| BE 464 | Nonpoint source Mat | | | Y | | | | | Y | Y | Y | | | Y | Y | Y | | |
| BE 440 | Renewable Energy Resource Engineering | | Y | Y | | Y | Y | | | | Y | Y | | | | | | Y |
| BIOSC 204* | Env Energy & Society | Y | Y | | Y | Y | Y | Y | Y | | Y | Y | | | | | Y | |
| BIOSC 441 | Ecology | | | | | | | | | | | | | | | | | |
| C E 436 | Sustainable Constr | | Y | | | Y | | | Y | Y | Y | Y | Y | | Y | Y | | Y |
| C E 437 | Sustainable Proj Planning | | Y | Y | | | Y | | Y | Y | Y | Y | | | Y | Y | | |
| E C E 420 | Renewable Energy | | | | | | | | | Y | | | | | | | | |
| E C E 461 | Solar Energy | Y | | | | | | | | Y | | | | | | | | |
| ECE/ME 457 | Wind Power | Y | | | Y | Y | | | | | | Y | | | | | | |
| ECON 319 | Environmental Econ | | | | | | Y | | | Y | | Y | | | | Y | | |
| EE&S 486 | Pollution Prevention and Industrial Ecology | | Y | | | | Y | | Y | Y | Y | Y | | Y | | | | |
| EN SP 200 | Intro Environ Sci | Y | Y | | | Y | Y | | Y | Y | Y | | | | | | Y | |
| EN SP 400* | Studies in En Sp | | Y | Y | | | Y | Y | Y | Y | Y | | | | | Y | Y | |
| ENR 450* | Conservation Issues | | | Y | | Y | Y | Y | | Y | | | | | | Y | | |
| FOR 315 | Woodland Ecology | | Y | Y | | | Y | | | Y | Y | | | | | | | |
| FOR 434 | GIS for Landscape Planning | | Y | Y | | Y | Y | Y | | Y | | | Y | | | Y | | |
| GEOL 112 | Earth Resources | | Y | Y | | Y | | | | | Y | | | | | | | |
| GEOL 120 | Natural Hazards | | Y | | | Y | Y | | | Y | | | Y | Y | | | | |
| GEOL 270* | Sustainable Water | | | | | | Y | Y | Y | | | | | | | Y | Y | |
| HIST 124* | Environmental History | Y | Y | | Y | Y | | Y | Y | | Y | | | | | | | |
| HON 206 | Experimental Forest | | Y | Y | | Y | Y | | | | Y | Y | | | | | | Y |
| HON 265 | Sustainable Energy Innovation | | Y | Y | | | Y | | Y | Y | Y | Y | | | Y | Y | | |
| HORT 101 | Horticulture | | Y | | | | | | Y | Y | Y | | | | Y | Y | | Y |
| HORT 308 | Sustainable Landscape Design | | Y | Y | | | | | Y | Y | Y | | | | Y | Y | | Y |
| HORT 458 | Sustainable Agriculture | | Y | Y | Y | Y | | | | | | Y | | | | | | |
| M E 420 | Ener Sources/Utiliz | Y | | | | Y | Y | | Y | Y | | Y | | | Y | | | |
| PHIL 345* | Environmental Ethics | | | | Y | Y | Y | Y | | | | | | | | Y | Y | |
| PHYS 245 | Physics of Climate Change | | | | | Y | Y | | | Y | | | | | | | | |
| PKGSC 368* | Pkg and Society | Y | Y | | | | | | | Y | | Y | Y | | | | | |
| R S 401* | Human Ecology | | | Y | Y | | | | Y | | Y | Y | | | | Y | | |
| WFB 313 | Conservation Biology | | Y | Y | | | Y | | | Y | Y | | | | | | | |
| WFB 418 | Fishery Conservation | | Y | Y | | | Y | | | Y | Y | | | | | | | |
| WFB 430 | Wildlife Conservation Policy | | Y | Y | | | Y | | | Y | Y | | | | | | | |

Total new costs associated with implementing the proposed program (general estimates only)
This minor is designed to use existing resources wherever possible. The courses are existing and faculty participation activities can be part of service requirements.

Estimated new costs associated with this program are listed on the attached. The main new costs associated with this minor are the graduate assistants and coordinator for the intro class. These people will also approve and coordinate projects and advertise and seek funding for the minor. For the coordinator, these activities would be at least 2 blocks of a normal FTE workload. Ideally, this person could devote their other 2 blocks of time as a coordinator for the Institute for Sustainability to further other sustainability education activities at Clemson (including fundraising). This would not be a tenure-track position, and would not be associated with a department. The coordinator would report to the Provost through the Institute for Sustainability. The graduate assistants would be selected by the Institute for Sustainability and report to the coordinator and their advisor

Approved Courses/Curricula
May 3, 2013
University Undergraduate Curriculum Committee

## I. College of Agriculture, Forestry and Life Sciences

### A. Microbiology



### B. Agricultural Education



### C. Agriculture



### D. Community and Rural Development



## II. College of Engineering and Science

### A. Environmental Engineering and Science



## III. College of Architecture, Arts and Humanities

### A. Art



## IV College of Health, Education and Human Development

### A. Youth Development Studies

CLEMSON UNIVERSITY

**Clemson University**
**University Curriculum Committee**

## A White Paper to Address the Introduction of General Education Interest Areas

August 27th, 2013

The purpose of this white paper is to provide a preliminary summary of thematic general education tracts, outline a proposed structure to be implemented within the Clemson University General Education core and provide connection in support of the Clemson 2020 Plan.

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The General Education "core" is a thread which bonds students across the University. In light of this please consider the following information to continue improving the quality of the curricula, helping us strive forward in continued excellence.

### Brief History of General Education at Clemson

In 2003 Clemson University's curricula were revised to reflect Clemson University's drive to push forward, increasing the quality of educational offerings at the University and further define the knowledge and capabilities students should take with them when they progress into their chosen career fields. Since the revision, modifications have resulted in the nine general education competency areas undergraduates master today.

In an ever changing global environment, where choice is emphasized, students need specialized attention and opportunities to engage in individualization. Undergraduate students at Clemson have not yet had the opportunity to engage with an integrated undergraduate core, navigating the curriculum with defined choice. Both students and faculty would benefit from increased flexibility in how requirements are met, to allow response to changing student demand and faculty interests.

During the 2013 SACSCOC accreditation reaffirmation, Clemson agreed to review its General Education program. That review could potentially result in:

- A complete revision of the goals and competencies for the General Education program
- Partial revision to the goals and competencies
- Restructuring of the course menus
- No changes

Any decision made by the faculty on revision will need to be based in assessment data. The General Education program will continue to be a focus of assessment efforts to ensure that the stated competency goals are being achieved.

**General Education Thematic Emphasis**

General Education requirements for the undergraduate student vary from institution to institution; however, they are more analogous than dissimilar in the current higher education environment. Undergraduate students in the United States spend a great deal of time completing general education requirements, approximately 30% over the course of their undergraduate career (Brint, Proctor, Murphy, Turk-Bicakci, & Hanneman, 2009). Institutions who strive to offer a different experience must work within the confines of their accrediting body, and strive to offer superior and varying experiences for the student in a limited amount of time.

Many higher education institutions in recent years have implemented a variety of successful initiatives to revamp the curricula, including the introduction of thematic "bundles". Brint et al. (2009) outlines thematic "bundles" of courses are offered to undergraduate students as part of the general education core in an effort to provide different perspectives on variety of important topics, such as environmental sustainability. Thematic bundles provide the opportunity for undergraduate students to choose a topic area of interest, enroll in a number of courses within the given theme to gain a greater understanding of a topic with momentum while fulfilling a general education requirement. Top-tier Universities including Duke University, University of North Carolina-Chapel Hill, University of Texas, Georgia Institute of Technology, and North Carolina State University offer varying opportunities for students to engage in related courses.

SACSCOC, Clemson University's regional accreditation body, requires only that every undergraduate student have at least 30 credits of general education course, defined as courses that are not discipline specific.

Section 2.7.3 of the SACSCOC Principles of Accreditation document outlines—

> In each undergraduate degree program, the institution requires the successful completion of a general education component at the collegiate level that (1) is a substantial component of each undergraduate degree, (2) ensures breadth of knowledge, and (3) is based on a coherent rationale. For degree completion in associate programs, the component constitutes a minimum of 15 semester hours or the equivalent; for baccalaureate programs, a minimum of 30 semester hours or the equivalent. These credit hours are to be drawn from and include at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural science/mathematics. The

> courses do not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession. If an institution uses a unit other than semester credit hours, it provides an explanation for the equivalency. The institution also provides a justification if it allows for fewer than the required number of semester credit hours or its equivalent unit of general education courses.

Beyond the above mentioned specifications, the general education program is determined by the faculty. A window of opportunity exists for the general education core to be delivered and presented to students in a more dynamic and flexible way.

**General Education Interest Areas at Clemson University**

Clemson's approach to General Education has been to specify a set of competencies that apply to every undergraduate student. This approach facilitates change of major across colleges. Clemson has also developed some distinctive aspects to its General Education program, including the Science and Technology in Society competency and the Distributed Competency approach, in which students take a series of courses designed to address a particular competency.

Numerous top tier Research I Institutions across the United States offer a variety of varying options for undergraduates to complete general education curriculum requirements with and without specified course groupings, emphasizing choice within a defined structure.

The University of North Carolina at Chapel Hill, a high-ranking peer institution, offers dynamic opportunities for students to fulfill general education requirements; including the option to complete an Interdisciplinary Cluster Program. In the early 2000's UNC-Chapel Hill embarked on a journey to globalize their campus and in doing so chose to rework their curriculum, focusing on "Making Connections" to create a more cohesive and integrated general education curricula (Smith & Kruse, 2009).

In an effort to provide a menu of courses related to specific topics UNC unveiled Interdisciplinary Course Cluster Programs. UNC's General Education structure is similar to Clemson's, in that students can select courses to fulfill requirements from a large menu of options.

Currently, UNC offers eleven Cluster Programs within the College of Arts and Sciences, offering students the opportunity to make connections among courses offered across several disciplines. Students who choose an Interdisciplinary Cluster complete nine credit hours (normally three courses) which are linked in both theme and focus. Focus areas for Interdisciplinary Clusters are proposed by

Faculty members and listed in the University's "Undergraduate Bulletin" or Catalog. Examples of current Cluster Program topical offerings listed in the 2013-2014 Undergraduate Bulletin and on the website for The Office of Undergraduate Curricula include; but are not limited to:

- Border Crossings
- Defining Difference
- Food Cultures
- Global Environmental Change
- Human Rights
- Medicine and Culture
- Memory Studies

At Clemson University, general education Interest Areas would serve as a grouping of courses within the general education core, emphasizing topical areas of interest to the undergraduate student. Students would have the option to complete a thematic general education tract, known as an Interest Area (IA), by choosing a topic area starting their freshman year. Students would complete at least fifteen hours from an approved listing of classes at the 1000, 2000, 3000*[i] levels. Students would choose from the existing lists of approved general education courses, and would be required to meet the general education rules and the rules of their department while completing an IA.

Topic areas would be chosen based on student interest and the guidance of the faculty from the curriculum committee, with topics remaining the same for at least two catalog years.

Students would not receive additional merit for completion of the courses within general education Interest Area sequence; however, students might gain a greater understanding of a topical area of interest, which could be applied in experiential interdisciplinary team settings within their major in years three and four and then within their career field after graduation.

*General Education Interest Area example:*

Sustainability—
Completion of 15 hours from the following course listings

*Lab Science—*

BIOL 1030/1050: General Biology, BIOL 1090: Introduction to Life Sciences or BIOL 1100: Principles of Biology, CHEM 1050: Chemistry in Context I or GEOL 1120: Earth Resources

*Non-Lab Science—*

BIOL 1220: Keys to Biodiversity, BIOL 1230: Keys to Human Biology, BIOL 1240: Keys to Reproduction (add 1200 for lab), ENSP 2000: Into to Environmental Science, PHYS 2450: Physics of Global Climate Change or GEOL 3000: Environmental Geology

*Social Science (two from different fields from the following list)—*

HIST 1240: Environmental History, GEOG 1060: Geography of the Physical Environment,

*Non-Literature Humanities—*

Larch 116: History of Landscape Architecture, STS 101: Survey of Science and
Technology in Society

*Cross Cultural Awareness—*

APEC 2050: Agriculture and Society, GEOG 1030: World Regional Geography

*Science Technology and Society—*

APEC 2050: Agriculture and Society, ECON 3190: Environmental Economics, ENR 3120: Environmental Risks and Society, GEOL 3000: Environmental Geology, GEOL 2700: Experience in Sustainable Development, HLTH 4310: Public and Environmental Health, HIST 1240: Environmental History, HIST 3920: History of the Environment in the United States, LARCH 1160: History of Landscape Architecture, PHIL 3400: Technology, Environment and Sustainability, or PHIL 3450: Environment and Ethics, or PHYS 2450: Physics of Global Climate Change, SOC 2030: Technology, Environment and Society, STS 1010: Survey of Science and Technology in Society

Building IAs into the general education requirements could engage students in higher levels of thinking, and entice students to take a more in-depth interest in their general education studies and ultimately take greater ownership of their own educational experience.

Benefits and Costs of the Interest Areas Approach to General Education

Benefits:

- No changes to competencies or course maps needed
- Flexibility for students in choosing courses to support a particular interest
- Clearer understanding of purpose of General Education for students

- Encourages faculty creativity and fosters collaboration among faculty
- Could help in recruiting top undergraduate students

Cost

- Requires course development to support new Interest Areas
- Faculty would need to plan ahead to participant in Interest Areas
- Interest Areas would need to be marketed to students and academic advisors

**Ties to Clemson's 2020 Road Map**

General Education Interest Areas provide the opportunity for Clemson to continue to strive toward success to meet the goals outlined in Clemson's 2020 Road Map. The 2020 Road Map outlines key strategic priorities, which should be achieved by 2020, to help Clemson meet three overarching goal areas to become a top 20 public institution. Clemson houses many renowned opportunities for undergraduate students to engage in alongside their major studies including Clemson's well-known Creative Inquiry (CI) Course Program. As Clemson continues to push undergraduate students to be leaders and innovators in an ever changing global economy, new strategies to engage the millennial student have emerged. During students' first two years at Clemson University general education IAs paired with $CT^2$ would allow students to engage in educational experiences at Clemson that help build a better student, community and world while driving global innovation for the new economy in support of Clemson's 2020 Road Map. Promotion of general education IAs would continue to bolster undergraduates' critical thinking prior to digging into their rigorous major course work. Specific 2020 Road Map strategies IAs impact would include:

**Improve Student Quality and Performance—**

*Directly impact:*

- Expanding efforts to enhance student performance by introducing new teaching and delivery methods; increasing competiveness for national awards; providing more opportunities for students to attend and present at national conferences and symposia;

*Indirectly impact:*

- and continuing to improve retention and graduation rates

**Provide Engagement Opportunities for All Students—**

*Directly impact:*

- Teach differently to build a culture of creativity that stimulates new ideas
- Offer course credit for structured engagement experiences
- Nurture creativity, critical thinking, communication skills and ethical judgment in students

*Indirectly impact:*

- Double the number of students participating in Creative Inquiry; service-learning, and study abroad

## 2020 Strategies Supporting General Education Interest Area Efforts

**Attract, retain and reward top people—**

Faculty who value teaching and strive to include students in the research process may seek Clemson University to continue to share their intellectual knowledge with the next generation of young professionals. Viewing the classroom as a place to share innovative ideas and an environment where students can develop needed analytical and critical thinking skills is a must.

## Curriculum Committee Charge

The Curriculum Committee's input and approval of General Education Interest Areas is essential to the continued progression of the Clemson curricula. As such, the Curriculum Committee is charged with the following:

- Consider whether Interest Areas could be an beneficial way of structuring General Education requirements
- Review thematic general education requirements, applicable topic areas
- Develop recommendations for integration of Interest Areas with $CT^2$ for coming academic catalogs
- Support Faculty across academic colleges to develop additional Interest Areas for undergraduate students
- Formulate a method to evaluate added value of General Education Interest Areas to the Clemson Undergraduate Educational Experience

*References*


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[*] 3000 courses would be limited in number in Interest Area course listings.

UCC
September 2013 Agenda
Item B New Business
Update Music Theory AP Policy

B

**From:** Bonnie Duncan
**Sent:** Monday, August 05, 2013 1:59 PM
**To:** Andrew Levin
**Cc:** Jeffrey Appling
**Subject:** Updated Music Theory AP Policy

Andrew,

Thank you for the information. It is exactly what we needed. This policy will go into effect for the 2014-15 *Undergraduate Announcements*. I have copied Dr. Jeff Appling on this e-mail so that he is aware of the change, and he can notify the Undergraduate Curriculum Committee. Please let me know if you have any further questions.

Sincerely,

Bonnie G. Duncan
Transfer Credit Coordinator/Counselor
OFFICE OF UNDERGRADUATE ADMISSIONS
Clemson University
105 Sikes Hall, Box 345124
Clemson, SC 29634-5124
(P) 864-656-2287/ (F) 864-656-2464
bonnieg@clemson.edu

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**From:** Andrew Levin
**Sent:** Saturday, August 03, 2013 12:35 PM
**To:** Bonnie Duncan
**Subject:** Re: Catalog question

Hi, Bonnie,

Here's what we've agreed on:

ADVANCED PLACEMENT CREDIT CHART

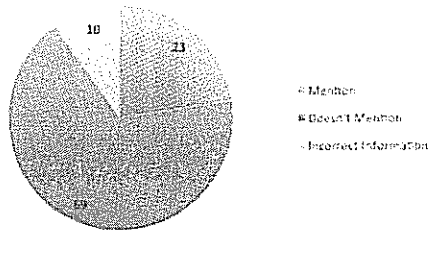
Discipline: HUMANITIES
AP Exam: Music Theory
Score: 3, 4, 5
Clemson Course(s) for which credit is awarded: (MUSC 1420/1430)
Credit hours: 4 [note: 1420 is for 3 hours, 1430 is 1]

Thanks for your help.

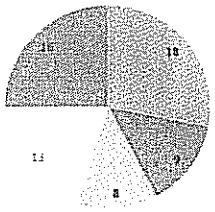
Andrew Levin

UCC
September 2013 Meeting Agenda
Item C New Business
Syllabus Survey

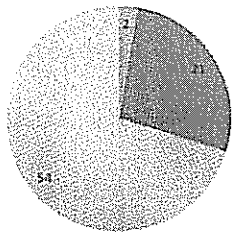
## Information on General Education Syllabi - AH



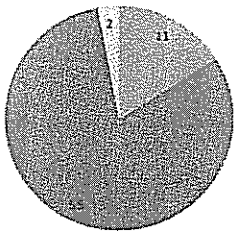

## Information on General Education Syllabi - CC



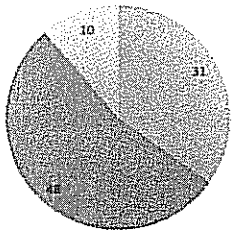

## Information on General Education Syllabi - Math



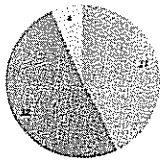

## Information on General Education Syllabi - NS




## Information on General Education Syllabi - SS




## Information on General Education Syllabi - STS



UCC
September 2013 Meeting Agenda
Item D New Business
Proposed Revision to Natural Science
Competency

D.

CLEMSON UNIVERSITY

26 August 2013

**MEMORANDUM**

**TO:** the University Undergraduate Curriculum Committee

**FROM:** Bob Kosinski, CAFLS representative to the UUCC RJK

**SUBJECT:** Proposed revision to the Natural Science competency

DEPARTMENT OF
BIOLOGICAL SCIENCES
College of Agriculture,
Forestry & Life Sciences

Clemson University
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Over the summer, I evaluated ePortfolio Natural Science artifacts along with several other faculty. My group became convinced that some changes need to be made to the wording of the competency. The existing competency is:

(Existing) **Demonstrate scientific literacy by explaining the process of scientific reasoning and applying scientific principles inside and outside of the laboratory or field setting.**

We thought that this is misleading, vague, and too narrow. We don't want students to explain the scientific method, we want them to demonstrate it by applying it to a real problem. "Apply scientific principles" could be more specific. "Inside and outside of the laboratory or field setting" is so broad that it is meaningless. Trivial assignments like worksheets are sometimes submitted, and we want to avoid that. Finally, the only acceptable artifacts now describe experiments that gather data and test hypotheses. Those are certainly preferable, but we thought that artifacts that critically analyze scientific literature should also be allowed. This would help transfer students in non-science majors who no longer have access to work they did in their introductory courses and must do a substitute assignment close to graduation. Therefore, we propose the following rewording:

(Proposed) **Demonstrate the process of scientific reasoning by performing an experiment and thoroughly discussing the results with reference to the scientific literature, or by studying a question through critical analysis of the scientific literature.**

If this competency revision is approved, we would rewrite the "student tips" as follows:

Natural Science Student Tips:

- The simplest and most common way to address this competency is to submit a report on a formal laboratory or field study. The best artifacts

will report on a scientific experiment in which an hypothesis is tested, data are analyzed, and conclusions are drawn. These typically come from Biology, Chemistry, Physics, Geology, or Astronomy courses.

- Non-experimental (literature survey papers) may be submitted if they critically review natural science research, discuss and analyze issues raised by that research, and are best if they propose questions which arise from this analysis.
- Descriptions of routine measurement techniques, worksheets, short-answer assignments, book reports, PowerPoint presentations, lesson plans, and the like cannot demonstrate the Natural Science competency.

UCC
September 2013 Meeting Agenda
Item E New Business
Proposed Revision to Cross Cultural Awareness Competency

**From:** Janice Murdoch
**Sent:** Thursday, August 15, 2013 4:04 PM
**To:** John Coggeshall
**Cc:** Rhonda Todd
**Subject:** RE: revised CCA statement

Yes, we need to bring it to UCC for discussion, then back down to colleges, then back to UCC.

**From:** John Coggeshall
**Sent:** Thursday, August 15, 2013 3:24 PM
**To:** Janice Murdoch
**Subject:** FW: revised CCA statement

Jan – James and Yanhua are OK with this revision. I'm assuming the next step would be to bring it to the UCC for approval? For information only? Then to Gail Ring?
Mike

**From:** YANHUA ZHANG
**Sent:** Thursday, August 15, 2013 2:40 PM
**To:** John Coggeshall
**Cc:** Sharon Nagy; JAMES M BURNS
**Subject:** Re: revised CCA statement

Look good to me. I say "yes."

On Aug 15, 2013, at 2:33 PM, John Coggeshall <raucus@clemson.edu> wrote:

How's this look, y'all?

"Demonstrate an understanding ofworld cultures in historical and/or contemporary contexts with reference to the interrelatedness of multiple aspects of culture.(e.g., history, politics, religions, family types, languages, the arts,technology, and the environment)"

Agenda Courses/Curricula
September 6, 2013
University Undergraduate Curriculum Committee

I. College of Engineering and Science

A. Electrical and Computer Engineering

| | | | |
|---|---|---|---|
| ECE 4490/649 | Comp NTWRK Security | 3(1,4) | 1 |

II. Miscellaneous

A. CU Courses

| | | | |
|---|---|---|---|
| CU 2500 | Critical Thinking Seminar - Literature & the Sciences | 3(3,0) | 3 |
| CU 2600 | Critical Thinking Seminar - Global Ethical Challenges | 3(3,0) | 5 |
| CU 2400 | Critical Thinking for Cross Cultural Awareness - Cultural Frameworks and Global Challenges | 3(3,0) | 7 |
| CU 2110 | Critical Thinking Seminar Arts & Humanities Literature | 3(3,0) | 9 |
| CU 2310 | Critical Thinking Seminar Social Science | 3(0,0) | 11 |
| CU 2300 | Critical Thinking in Social Science - Global Challenges | 3(3,0) | 13 |
| CU 2320 | Critical Thinking in the Social Sciences - Sociology | 3(3,0) | 15 |
| CU 2200 | Critical Thinking in Science, Technology and Society: Global Challenge | 3(3,0) | 17 |

Memo - No courses were approved at the September meeting due to poor structure, weak application and rationale statements. Members agreed to work with instructors to improve course information and resubmit at a later date.

CLEMSON

**Curriculum and Course Change System - Print Minor Form**

**Add Minor:** Minor in Sustainability

**Effective Catalog Year:** 2013

**Catalog Description:** A minor in Sustainability requires 18 credits, distributed as follows: - 3 credits of CU 201 - Sustainability Leadership - 12 credits of courses that focus on sustainability issues: 315*, AP EC 457*, ARCH 370*, ARCH 471*, ARCH 472*, BE 464, BE 440, BIOSC 204*, BIOSC 313, BIOSC 441, C E 436, C E 437, E C E 420, E C E 461, ECE/ME 457, ECON 319, EE&S 486, EN SP 200, EN SP 400*, ENR 413, ENR 450*, FOR 434, GEOL 120, GEOL 270*, HIST 124*, HON 206 (Sustainable Energy Innovation), HON 206 (Experimental Forest), HORT 101, HORT 308, HORT 456, M E 420, PHIL 345*, PHYS 245, PKGSC 368*, R S 401*, WFB 313, WFB 418, WFB 430. Other courses may be submitted, through CU 201 instructor(s), for approval for inclusion on this list. - 3 credits of approved engagement activities (e.g. creative inquiries, study abroad, independent research, co-ops, capstone projects) that focus on sustainability issues. Engagement activities are approved if they meet learning objectives in the assessment plan for the minor. - At least 9 credits must be at the 300-level or higher. - At least 3 and no more than 9 credits must be from the social dimension of sustainability (indicated by * in the course list above).

**Form Originator:** LEIDYK, Leidy Klotz **Date Form Created:** 4/3/2012
**Form Last Updated by:** LEIDYK, Leidy Klotz **Date Form Last Updated:** 5/2/2013
**Form Number:** 4996

**Approval**

| | | | |
|---|---|---|---|
| | 9/5/13 | | 9/6/2013 |
| Chair, Department Curriculum Committee | Date | Chair, Undergraduate Curriculum Committee | Date |
| | | | |
| Department Chair | Date | Chair, Graduate Curriculum Committee | Date |
| | 9/15/13 | | |
| Chair, College Curriculum Committee | Date | Provost | Date |
| | 9/6/13 | | 11/27/13 |
| College Dean | Date | President | Date |

Memo – Sustainability Minor was approved at the May 2013 meeting, but CES just brought signature copies to the September meeting.