CLEMSON UNIVERSITY

MEMORANDUM

TO: Debra Jackson, Institutional Effectiveness and Assessment
Robert Jones, Vice President for Academic Affairs and Provost

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

DATE: January 27, 2015

SUBJECT: Administrative Approval of Curriculum Items

DEAN
UNDERGRADUATE
STUDIES

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The Undergraduate Curriculum Committee met on December 5, 2014 to approve the attached curriculum/course changes received in the Office of the Provost, January 27, 2015. The purpose of this memorandum is to respectfully request that you review this information and concur by giving final signature approval.

APPROVED:

Debra S Jackson DATE 1-29-15
DR. DEBRA JACKSON, INSTITUTIONAL EFFECTIVENESS AND ASSESSMENT

Robert W Jones DATE 2-11-2015
DR. ROBERT JONES, VICE PRESIDENT FOR ACADEMIC AFFAIRS & PROVOST

/rft

C: File

Attachments

AGENDA

University Undergraduate Curriculum Committee Meeting

Friday—December 05, 2014 —1:30 PM

E304 Martin Hall

I. **Call to order**

II. **Introductions**

III. **Consideration of November meeting minutes**

IV. **New Business**

V. **Old Business**

A. Proposed General Education Assessment Protocol
   1. Updated 11/25/2014 – Kosinski
   2. Timeline - Appling

VI. **Committee reports**

A. Arts & Humanities – Bruce Whisler
B. Mathematical & Natural Sciences – Bob Kosinski
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 – Cameron Bushnell

VI. **Curricula/course approvals - attached**

VII. **Other business**

VIII. **Adjourn**

Dec. 5, 2014

To: University Undergraduate Curriculum Committee

From: Pamela Mack

Re: Report of the STS Subcommittee of the University Undergraduate Curriculum Committee

Representing the STS subcommittee, Pam Mack and Christine Minor recommend the approval of ENGR 2200 - Evaluating Innovations: Fixtures, Fads, and Flops for STS credit.

University Undergraduate Curriculum Committee
Minutes Meeting
E304 Martin Hall
November 7, 2014, 1:30 PM

Members Present: Jeff Appling, chair; Joe Mazer, Mike Coggeshall; Angela Morgan; Bob Kosinski; Cheryl Ingram-Smith; Mary Beth Kurz; Brian Dominy; Andy Tyminski; Hugh Spitler; Gordon Cochrane; Matt Abrams; Julie Pennebaker; Shannon Clark; Cecelia Hamby; David Knox; Dan Wueste; Gail Ring and Rhonda Todd

Guests: Matt Klein; Sandy Linder; Holly Williams; Megan Kyle; Amber Ellison; John Ballato

Appling convened the meeting at 1:31 PM

Introductions
Appling welcomed the committee.

Approval of minutes
The committee approved the October meeting minutes.

Old Business

A. **Proposed General Education Assessment Protocol** – Appling reported he had a good conversation with a department chair about General Education (GE). That department intends to start their own assessment of GE. He stated that it is in the best interest of Clemson University to continue to have data and assessment of GE this year. He reported that other universities typically have a GE committee who review and make decisions involving GE. The committee discussed the possibility of an ad hoc committee until Faculty Senate could determine if a permanent committee with representation from each college would be advantageous to the GE process. The committee discussed appointment or election should involve those who are not tenure track faculty due to the fact that they teach many of the GE courses.

   The committee continued discussion about the best way to assess GE for this year. They discussed section sampling of artifacts. Kosinski stated that most faculty are concerned about who will grade/score the artifacts, and who will provide feedback to the faculty about performance. Coggeshall stated that a white paper with GE history might be helpful as we begin working with faculty about the process by which the competency was developed. Appling agreed that he could work on a white paper. Kosinski stated that clearer communication about what is needed in the competency and assignments for the artifact is exactly what the faculty need. The committee discussed if a small scale test was run in the spring, would Gail Ring still be able to do the summer assessment workshops. Ring stated that upon approval, she would be able to do that. She reported that she has a list of volunteers who might agree to a small scale test. Coggeshall stated that we need good representation from each area. Spitler moved that the discussion be tabled for further discussion, Mazer provided the second, all were in agreement.

B. **General Education Attributes** – Appling reported hearing back from a few colleges, but he expects more feedback as they have time to discuss.

C. **Internships** – Appling reported that the subcommittee met, and identified several challenges. Appling stated the subcommittee discussed best practices at other universities, but the group remains wary of regulating internships. He will have something more to present in February.

D. **Committee Reports**
   a. Arts & Humanities – Bruce Whisler
   b. Mathematical & Natural Sciences – Bob Kosinski
   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 – Cameron Bushnell

D. **Curriculum/course approval** – See attached. Appling reported that upon review all the prerequisite changes looked appropriate. Spitler made a motion to accept all prerequisite changes, the committee agreed, no one opposed.

Other Business

Appling stated he was concerned that most of the forms in the packet are from the old system, and faculty members are not using the new system; therefore, we cannot iron out issues with the new system.

The meeting adjourned at 3:45 PM.

Minutes respectfully submitted by Rhonda Todd

25 November 2014

PROPOSAL

TO: the University Undergraduate Curriculum Committee

FROM: Bob Kosinski, Biological Sciences and Chair of the CAFLS Curriculum Committee

SUBJECT: Revision of Proposed Gen Ed Assessment Protocol

The end of the ePortfolio graduation requirement means that Clemson must devise a new method to determine whether Gen Ed courses are successfully providing students Gen Ed competencies. The Undergraduate Curriculum Committee (UCC) seems to be leaning towards requiring Gen Ed courses to contain assignments that could demonstrate a competency and having the resulting artifacts submitted to a repository for later faculty evaluation. The emphasis of this effort is programmatic assessment, not assessment of individual students or instructors.

However, this means that more responsibility will shift to faculty who teach Gen Ed courses. Gen Ed faculty must be aware of the requirements of the competency and the characteristics of a valid artifact.

Following extensive discussion with UCC members on 7 November, I suggest that the UCC should approve the following six policies:

a) Gen Ed faculty (faculty teaching courses listed on pp. 37-38 of the 2014-2015 *Announcements*) need to be aware of the requirements of the competencies covered by their courses;
b) To maintain its Gen Ed status, a Gen Ed course or its laboratory component must give at least one assignment that demonstrates the competency covered in the course. This assignment should be named in the course syllabus (see syllabus example on next page);
c) This assignment should be designed so it is consistent with the published Gen Ed competency and its evaluation rubric (see the attached examples for Natural Sciences and Mathematics);
d) The faculty member teaching the Gen Ed course should give each assignment its normal grade within the course, and then these artifacts should be submitted (either by the faculty member or by the students themselves) to an "Artifact Repository" where they will be accessible to evaluators;
e) Evaluators would be faculty volunteers recruited University-wide each summer and given training in the rubric so they produce valid and unbiased assessments;
f) A section of a course might be selected for evaluation only every several years, but in the years it is selected, every competency assignment from the section would be assessed.

The UCC also seemed to be in favor of a pilot implementation (using volunteer Gen Ed faculty) in the spring of 2015. There was also the beginning of a discussion about establishing a Gen Ed Committee with heavy representation of Gen Ed faculty.

Example of a Gen Ed Paragraph Included in a Syllabus

GEN ED COMPETENCY: All Clemson students must demonstrate achievement of the General Education "competencies," listed on pp. 37-38 of the 2014-2015 *Announcements*. BIOL 1110 teaches the Natural Sciences competency:

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 evidence in the scientific literature.

In the BIOL 1111 lab, you will write two lab reports and a library research paper according to directions in a Writing Guide you will download. The second lab report (on plant nutrient deficiency) will be part of your lab grade, but will also be submitted to a repository when the course is finished. Evaluators will use it to estimate how well the course is teaching the Natural Sciences competency. This evaluation will have no effect on your grade and will involve no extra work for you. However, if you do the paper according to the Writing Guide directions, your paper should demonstrate good mastery of the Natural Sciences competency.

Example of Information Sent to a Natural Sciences Gen Ed Faculty Member

Text of the competency:

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 evidence in the scientific literature.

A successful artifact will:

- Exhibit understanding (appropriate for the course level) of the scientific principles behind the experiment or literature survey;
- Formulate clear, falsifiable hypotheses;
- If reporting on an experiment, use an experimental design capable of testing the hypotheses;
- Collect adequate data;
- Analyze the data appropriately;
- Draw conclusions supported by the data;
- Discuss the broader implications of the study.

Further tips to the instructor:

- The typical artifact is a report on a formal laboratory or field study. An artifact of this kind will report on a scientific experiment in which a hypothesis is tested, data are analyzed, and conclusions are drawn about the correspondence of the results to expected outcomes or values.
- 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.
- The student's understanding of the science behind the experiment or literature should be evident in the artifact. Artifacts that do not demonstrate scientific knowledge will be regarded as inadequate.
- Worksheets, short-answer assignments, descriptions of routine measurement techniques, book reports, PowerPoint presentations, and lesson plans cannot demonstrate the Natural Sciences competency.

Example of Information Sent to a Mathematics Gen Ed Faculty Member

Text of the competency:

Demonstrate mathematical literacy through solving problems, communicating concepts, reasoning mathematically, and applying mathematical or statistical methods, using multiple representations where applicable.

A successful artifact in general mathematical analysis will:

- Correctly use algebraic and geometric transformations and logic, including those embedded in multistep problems;
- Correctly translate between mathematical language and lay language.

OR

- Correctly present and apply a mathematical technique to a real world problem discussed in the specific mathematical area under study;
- Correctly translate between mathematical language and lay language.

A successful artifact in statistics will:

- Correctly identify variables and the relationships among them;
- Use appropriate statistical methods to describe quantitative data observed or generated from these variables;
- Correctly present numerical, graphical, and algebraic representations of these data.

Further tips to the instructor:

- The student must *perform mathematics* in order to demonstrate this competency. The mere discussion of quantitative data will not be sufficient.
- The artifact must describe the context in which the mathematical work is being presented.
- The artifact should present a mathematical relationship (an equation or graph) with definitions of relevant symbols.
- A solution based on manipulating equations or considering statistics should be presented.
- The artifact should interpret the results of the mathematical or statistical work.
- Notes on some common types of artifacts:
  a) A hypothetical mathematical problem could be acceptable if the student describes the context and explains the process used in reaching the solution.
  b) Excel spreadsheets will not qualify unless the student includes explanations of the math and interpretation of results.
  c) Mathematics exams could be sufficient provided that step-by-step calculations are shown, and they include written interpretation of results.
  d) Research papers with statistical calculations are acceptable for this competency, but the calculations must be shown and discussed.
  e) Input/output from statistical software must be presented as a Word file or PDF so that assessors can open the file. Also, the artifact must include explanations of the mathematics and interpretation of results.

Timeline of General Education Assessment

2003 Successful reaccreditation by SACS

2004 Last year Gen Ed C.O.W. requirements appear in the Announcements
Faculty Gen Ed task force revises Gen Ed requirements, expands competencies beyond C.O.W.
Gen Ed task force creates 22 competencies
Gen Ed task force plans for students to create an ePortfolio to allow collection of artifacts

2005 List of 22 Gen Ed competencies appears in the Announcements
Ad hoc faculty committee formed to create assessment rubrics for Gen Ed competencies
ePortfolio faculty task force selects Blackboard for collection of artifacts
CCIT begins ePortfolio programming in Blackboard
ePortfolio faculty task force recommends a graduation requirement
UUCC approves undergraduate ePortfolio graduation requirement

2006 ePortfolio task force recommends formative assessment plan to provide student feedback
Ad hoc faculty/student committee designs CI team-based ePortfolio formative assessment

2007 ePortfolio Director hired
Faculty form CI teams and develop training protocols for ePortfolio artifact evaluation
Only faculty evaluators are allowed to assign failing scores

2008 UUCC revisits competencies, faculty vote to reduce the number to 19
In response to economic pressures, faculty Gen Ed task force is created
Blackboard upgrade crashes ePortfolio programming
New artifact collection program created, CUePort
First faculty formative assessment of ePortfolio artifacts held in summer (yearly henceforth)

2009 Gen Ed task force recommends removal of Advanced Writing requirement, approved by UUCC
Gen Ed task force recommends new theme-based Gen Ed structure (not considered by UUCC)
List of 19 Gen Ed competencies appears in the Announcements
Summer assessment faculty evaluators recommend reduction to eight Gen Ed competencies
UUCC approves eight Gen Ed competencies
First undergraduates held to ePortfolio graduation requirement (Fall, around 200 transfers)

2010 List of eight Gen Ed competencies appears in the Announcements
Communication, Ethical Judgment, and Critical Thinking are distributed competencies
Students provide artifacts for EJ and CT, all artifacts are evaluated for Communication
Programs identify courses in which distributed competencies are evaluated
Programs update Gen Ed checklists to include assessment of distributed competencies

2011 Summer assessment faculty evaluators recommend changes to A&H competency

2012 UUCC discusses but does not change A&H competency
SACS rejects Academic and Professional Development (2 cr) as Gen Ed

2013 Double dipping only allowed as long as 31 cr of Gen Ed courses are completed
Formative assessment CI students are replaced with non-undergraduate ePortfolio evaluators

2014 UUCC approves elimination of ePortfolio graduation requirement
Provost selects faculty committee to review assessment of Gen Ed
UUCC proposes collection of Gen Ed artifacts through sampling of course sections (pending)

Approved Courses/Curricula
December 05, 2014
University Undergraduate Curriculum Committee

I.	College of Art, Architecture, and Humanities					
	A.	Communication Studies				
			COMM 1800	Introduction to Cross Cultural Communication - new	3(3,0)	1
	B.	Department of Languages				
			FR 4100	Francophone Lit - change prerequisite	3(3,0)	3
	C.	Production Studies in Performing Arts				
				BA Prod Stud in Perform Arts - change curriculum requirements		5
			MUSC 3710	Women's Glee - change title	1(0,0)	8
			MUSC 3720	Men's Glee - change title	1(0,0)	10
			MUSC 3730	University Chorus - delete		11
II.	College of Agriculture, Forestry and Life Sciences					
	A.	Agribusiness				
				Request to change rubric on APEC courses to AGRB		12
	B.	Entomology				
			ENT 4200/6200	Systematic and Biodiversity - new course	4(3,3)	15
			ENT 4980/6980	Special Topics in Entomology - new course	1-4	18
	C.	Environmental and Natural Resources				
			ENR 1020	Introduction to Environmental and Natural Resources II	1(1,0)	20
				BS Environmental/Nat Res - change curriculum requirements		22
				BS Environmental/Nat Res - change curriculum requirements		25
				BS Environmental/Nat Res - change curriculum requirements		27
	D.	Horticulture				
			HORT 4560/6560	Organic Vegetable Production-change title,method,descri	3	30
			HORT 4561	Organic Vegetable Production - delete lab		
	E.	Plant & Environmental Sciences				
				BS Plant & Environment Sciences - change curriculum requirement		33
	F.	Animal and Veterinary Sciences				
			AVS 3600	Internship - changing prerequisites		36
			AVS 4000	AVS Professional Development - change prerequisites		38
	G.	Microbiology				
			MICRO 4130/6130/I	Industrial Micro - change prerequisites	3(2,3)	40
	H.	Food Science				
			NUTR 2050	Nutr for Nurs Prof - change catalog description	3(3,0)	41
	I.	Biochemistry				
			BCHM 3010	Molecular Biochem - change prerequisites		43
			BCHM 3050	Essen Elements Bioch - change prerequisites		45
III.	School of Education					
	A.	Education				
				BA Science Teaching - change curriculum requirement		47
				BA Secondary Education - change curriculum requirements		49
				BA Science Teaching - change curriculum requirements		52
				BA Science Teaching - change curriculum requirements		57
				BS Science Teaching - change curriculum requirements		62
				BS Mathematics Teaching - change curriculum requirements		65

				Special Education - change curriculum requirements		70
				BA Elementary Education - change curriculum requirements		76
			EDEL - 4810	Directed Teach Elem - delete course		80
			EDEL - 4811	Direct Tch Elem Lab - delete lab		82
	B.	Athletic Leadership				
			AL 3510	CPR/AED for Athletic Coaches - new course		84
IV.	Honors College					
			HON 2050	Current Topics - change title, credit, modifier, description	1-3	90
V.	College of Engineering and Science					
	A.	Bioengineering				
			BIOE 2000	Bioengineering Professional Development - new	0(1,0)	98
			BIOE 3000	Bioengineering Ethics and Entrepreneurship - new	0(1,0)	100
			BIOE 3020	Biomaterials - change prerequisites	3(2,3)	102
			BIOE 4000	Senior Seminar - change title,method,descrip, prerequisit	1(1,0)	103
			BIOE 4230/6230	Cardiovascular Enr and Path - change prerequisites	3(3,0)	105
				BS Bioengineering - change curriculum requirements		
	B.	Electrical and Computer Engineering				
			ECE 4370/6370	Microelectromechanical Systems - new	3(3,0)	106
	C.	Environmental Engineering and Science				
			BE 4150/6150	Inst.&Control for Bio Eng. - outcomes, change prerequisites		108
				BS Biosystem Engineering - change curriculum requirements		110
	D.	General Engineering				
			ENGR 2200	Evaluating Innovations - new course	3(3,0)	115
	E.	Industrial Engineering				
			IE 2010	Systems Design I - renumber	4(3,3)	116
			IE 4810/6810	App of Prob Mode is in IE - new course	3(3,0)	117
			IE 4840/6840	Applied Engineering Economics - new course	3(3,0)	119
			IE 4860/6860	Scheduling - new course	3(3,0)	121
	F.	Mathematical Sciences				
				Math Minor - change minor requirements		123
				Math Minor - add minor requirements		125
				Math Statistics - add minor requirements		127
			MATH 4120/6120	Algebra - add prerequisite		129
			MATH 4130/6130	Algebra II - ?		134
			MATH 4530/6530	Advanced Calculus I - change prerequisites		137
			MATH 4540/6540	Advanced Calculus Ii - change prerequisites		140
	G.	School of Computing				
				BS Computer Science - change curriculum requirements		143
				BA Computer Science - change curriculum requirements		148
			CPSC 1010	Computer Science I - change prerequisites		149
			CPSC 4060/6060	GP Computation on Graphical Processing Chart - cross reference/prere		150
VI.	College of Business & Behavioral Science					
	A.	Accounting				
				Change major curriculum requirements - improve time to	1-3	152
	B.	Finance				
			FIN 3110	Financial Mgmt I - changing prerequisites		156
			FIN 4010	Corporate Financial Analysis - new course	3(3,0)	158
			FIN 4030	Spreadsheet Applications - new course	3(3,0)	165
			FIN 4040	Financial Modeling - change prerequisites		173

			FIN 4990	Special Topics - new course	3(3,0)	175
				Financial Management - change curriculum requirements		182
	C.	Military Leadership				
			ML 2011	Leadership Develop I - change credit	3(2,2)	187
			ML 2021	Leadership Dev II - change credit	3(2,2)	189
	D.	Political Science				
			POSC 4430	Political Behaviors - new course	3(3,0)	191
	E.	Graphic Communications				
			GC 1020	Art & Cad - change learning objectives/add honors sectio	4(2,6)	200
			GC 1040/H	Graphic Com I - change description/prerequisites	4(2,6)	207
			GC 2070/H	Graphic Com II - change description	4(2,6)	217
			GC 4060/6060/H	Pkg.&Spec Prtg - change description	4(2,6)	227
			GC 4460/6460/H	Ink & Substrates - change descript/prerequisite/delete cl	3(2,3)	235
			GC 3401/H	Digital Img & Emedia - change description	4(2,6)	241
			GC 2400	Intro to Web Design - new course	3(2,3)	249
			GC 2510	Special Projects - new course	1-6	255
			GC 2510	Special Projects in GC I - new course	1-6	259
			GC 3510	Special Projects in GC II - new course	1-6	263
				Graphic Communications - change curriculum requirements		
VII.	Health and Human Development					
	A.	Health Science				
			HLTH 1010	Introduction to Health Careers - evolution of the discipline		266
			**NURS 3500	Contemporary Healthcare Ethics - new course	3(3,0)	269
			HLTH 4700	International Health - change title	3(3,0)	271
			NURS 3040	Pathophysiology - change prerequisites	3(3,0)	273
				**new number needed		
				Courses highlighted in gray were tabled or not approved		