

Julia Shadoan, Faculty Senate Chair

Senate Recommendation 2019-12-01 Colonnade General Education
Report 11.5.19

Colonnade General Education Committee Report
University Senate
Nov. 5, 2019

Action Items

Course Proposals and syllabi attached

Approval of:

1. PHYS 363 Science Conflicts: Historical and Contemporary (Connections: Social and Cultural)
Implementation: Fall 2020

Information

1. The Committee discussed proposed additions and clarifications of the Guidelines for Applying to Colonnade. This is a first reading, with wordsmithing anticipated. The first reading is attached.
2. Mary Wolinski attended the Graduate council meeting to observe the GreenLeaf workflow program, in anticipation of its eventual use for Colonnade courses.

Colonnade Connections Course Proposal Social and Cultural Subcategory

Proposal Contact Name, E-mail, and Phone: Scott Bonham, scott.bonham@wku.edu, N/A
College and Department: OCSE, Physics and Astronomy Proposal Date:

1. Course Details:

- 1.1 Course prefix (subject area), number and title: Physics 363: Science Conflicts: Historical and Contemporary
- 1.2 Credit hours: 3
- 1.3 Prerequisites*: None (other than completion of Colonnade requirements for connections courses.)
- 1.4 Crosslisted and/or equivalent courses (prefix and number): none
- 1.5 Expected number of sections offered each semester/year: one section /year
- 1.6 Is this an existing course or a new course? New
- 1.7 Proposed implementation term? Fall 2020
- 1.8 Where will this course be offered? Bowling Green main campus.

2. Provide a brief course description (100-200 words).

Science is an integral part of our modern, technology-driven lives, yet there is often a disconnect between the practice and communication of science with the larger socio-cultural context in which we live. Prime examples are socio-scientific controversies such as global warming, origins, genetically modified organisms, vaccinations and the like. In such situations the scientific understand is important, but so are the social and cultural perspectives of the larger society that shape the science and its reception; perspectives that do not always align with each other and can seem incomprehensible with each other. The goal of this course is to develop abilities to understand scientific work in the larger social and cultural context from multiple perspectives and communicate across them.

During the first part of the course students will study one historical scientific controversy from multiple perspectives: the science itself, the cultural context in which it happened, and social perspectives through which that was interpreted. Examples could be Galileo's trial, relativity, or the multiple shifts on the nature of light. Students will read multiple works on the topic, analyzing the science involved, the perspective of the author, and the scientific controversy itself. During the latter part of the semester, students will choose a different scientific controversy, historical or contemporary, study it from multiple perspectives and reporting their findings.

3. Explain how this course provides a *capstone* learning experience for students in Colonnade (compared to an introductory learning experience).

This course will explicitly deal with the intersection of scientific, cultural, historical, religious and philosophical topics and students will need to draw on those different areas to understand and analyze particular positions on socio-scientific controversies. Students will look at and evaluate scientific claims within a wider social and cultural context that will draw on fields such as history, philosophy, sociology, psychology, rhetoric, etc.

* Courses may require prerequisites only when those prerequisites are within the Colonnade Foundations and/or Explorations listing of courses.

4. List the *course goals* (see Glossary of Terms), and explain how are they aligned with the Connections student learning outcomes.

Connections Student Learning Outcomes	How does the course meet these learning outcomes? (Align course goals to Connections SLOs)
1. Analyze the development of self in relation to others and society.	Students will identify and describe their own socio-scientific paradigm/worldview and expertise, and reflect on how that is similar and different from others.
2. Examine diverse values that form civically engaged and informed members of society.	Students will examine and analyze the claims, paradigms, assumptions, values, and arguments of different positions on the controversial topic, both differences and common ground.
3. Evaluate solutions to real-world social and cultural problems.	Students will develop the ability to identify and understand the cultural paradigms of those holding different views and finding ways to communicate across those differences.

5. List additional student learning outcomes, beyond the three Connections SLOs, that will guide student learning in this course (if any).

- Analyze a historical socio-scientific controversy, its roots, dynamics and impacts on science and society even today.

6a. Explain how the department plans to assess each of the Connections student learning outcomes *beyond course grades*. Note: SACSCOC requires assessment of SLOs to compare Bowling Green campus, online, and regional campus learning experiences; some consideration of such a distinction must be included in the right-hand column, when applicable.

Connections Student Learning Outcomes	Artifact utilized	Process of assessment
1. Analyze the development of self in relation to others and society.	The portion of final analysis paper where the student compares and contrasts his/her position with that of the works analyzed.	The corresponding scale of the rubric below will be part of the rubric used to evaluate student work, and so will be assessed by instructor for all students. The department head will designate a different faculty member to independently grade a randomly selected 20% of the essays to check consistency. Expectation is that at least 70% of students will score “Good” or “Excellent” on this scale.
2. Examine diverse values that form civically engaged and informed members of society.	The portion of final analysis paper where the student discusses the paradigm, assumptions, goals, motivation and values of the works analyzed.	The corresponding scale of the rubric below will be part of the rubric used to evaluate student work, and so will be assessed by instructor for all students. The department head will designate a different faculty member to independently grade a randomly selected 20% of the essays to check consistency. Expectation is that at least 70% of students will score “Good” or “Excellent” on this scale.
Connections Student Learning Outcomes	Artifact utilized	Process of assessment

3. Evaluate solutions to real-world social and cultural problems.	The portion of final analysis paper where the student critiques the argument of the work analyzed.	The corresponding scale of the rubric below will be part of the rubric used to evaluate student work, and so will be assessed by instructor for all students. The department head will designate a different faculty member to independently grade a randomly selected 20% of the essays to check consistency. Expectation is that at least 70% of students will score “Good” or “Excellent” on this scale.
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6b. Include the rubric that will be used for Connections assessment (either in the space below or as an attachment). Also, for each of the SLOs briefly note what benchmarks you will use to determine whether the course successfully met its goals for each of the rubrics.

<i>Criteria/Scale</i>	<i>Excellent (4)</i>	<i>Good (3)</i>	<i>Fair (2)</i>	<i>Poor (1)</i>
Analyze the development of self in relation to others and society.	Clearly identifies the student’s own position on the topic and provides a thoughtful justification for it.	Identifies the student’s own position on the topic and provides a reasonable justification for it	Identifies some elements of the student’s position on the topic and/or some justification for it.	Fails to identify the student’s perspective on the topic.
Examine diverse values that form civically engaged and informed members of society.	Demonstrates good understanding of the paradigm, values, assumptions, motivations and goals of the work analyzed and of the cultural context behind it.	Discusses the paradigm, values, assumptions, motivations and goals of the work and shows some understanding of the cultural context.	Describes some of the paradigm, assumptions, motivations, values and goals of the work.	Fails to discuss the paradigm, assumptions, motivations, values or goals in any meaningful way.
Evaluate solutions to real-world social and cultural problems.	Student articulates clear and thorough evidence-based reasons for their critique (strengths and weaknesses) of the works analyzed.	Student provides valid reasons with evidence for their critique (strengths and weaknesses) of the works analyzed.	Student provides some reasons for their critique (strengths and weaknesses) of the works analyzed.	Student provides no reasons, fallacious reasons, or simply emotional/ personal attacks on the other position.

7. Evidence & Argument Artifact.
The final analysis paper will be used.

8. Attach a sample course syllabus. The course syllabus must contain the three Connections student learning outcomes for the subcategory as well as any additional student learning outcomes listed in this application, and those learning outcomes must appear in every section's syllabus.

Physics 363: Science Controversies

Time: TBD
Instructor: Dr. Scott Bonham
Office Hours: TBA

Location: Ogden College Hall 1003
Office: Kelly Thompson Hall 2023
Email: Scott.Bonham@wku.edu

Cultural conflicts are not simply products of the machinations of the warped minds of one's opponents, but rather reflect deeply embedded cultural patterns. These patterns will need to be understood and taken into account by those who are looking for non-polarizing solutions to the problems of living together peacefully.

—George Marsden

Overview

Science is an integral part of our modern, technology-driven lives, yet there is often a disconnect between the practice and communication of science with the larger socio-cultural context in which we live. Prime examples are socio-scientific controversies such as global warming, origins, genetically modified organisms, vaccinations and the like. In such situations the scientific understanding is important, but so are the social and cultural perspectives of the larger society that shape the science and its reception; perspectives that do not always align with each other and can seem incomprehensible with each other. The goal of this course is to develop abilities to understand scientific work in the larger social and cultural context from multiple perspectives and communicate across them.

Class Format

This is a seminar class, primarily driven by the readings. For the majority of the semester, each student will need to complete the assigned reading ahead of time and come to class prepared to discuss it. Preparation and active participation in the discussion is essential and will be part of the evaluation. In addition, the instructor will frequently make short presentations to provide more context, background, or explain difficult passages. During the last few weeks when you will be working on your project, there will be time for individual work, discussions about your readings with small and large groups, and individual conferences with the instructor.

Learning Objectives:

- Analyze the development of self in relation to others and society through identifying your own position on a controversial issue, reflecting on why you hold that position in terms of values, assumptions and influences, and how that relates to others.
- Examine diverse values that form civically engaged and informed members of society through analyzing the paradigms, assumptions, goals and methods of different positions on a controversial topic.
- Evaluate solutions to real-world social and cultural problems by learning to understand different perspectives, identifying common ground and roots of differences.
- Analyze a historical socio-scientific controversy, its roots, dynamics and impacts on science and society even today.

Texts

Dava Sobel, *Galileo's Daughter: A Historical Memoir of Science, Faith, and Love*
Galileo Galilei, *Dialogue Concerning the Two Chief World Systems* [†]

[†] May either be downloaded from the internet (free of charge) or purchased in book form.

Christopher M. Graney, *Setting Aside All Authority: Giovanni Battista Riccioli and the Science against Copernicus in the Age of Galileo*

Andrew Dickson White, *A History of the Warfare of Science with Theology in Christendom* ††

Sam Leith, *You Talkin' to Me? Rhetoric from Aristotle to Obama*

Aristotle, *On the Heavens* †‡

Additional articles and handouts will be posted on Blackboard.

Assignments

Over the course of the semester you will write several short papers and one significant analysis paper, on which you will also make a classroom presentation. More details and grading rubrics will be provided for these during the semester. The assignments will include:

- Metacognitive analysis of four texts: *Galileo's Daughter*, *Dialogue Concerning the Two Chief World Systems*, *Setting Aside All Authority*, and *A History of the Warfare Between Science and Theology in Christendom*. For each you will discuss who the author is (background and motivation), theme(s) and objectives of the work, assumptions, science, rhetorical approach, and choices of what was included and what was left out. (~2 pages each.)
- Comparison/contrast paper: select one component of the historical controversy treated by two or more authors and includes scientific/philosophical issues. (For example: observations of stars, of other heavenly bodies, falling of objects on a rotating sphere, etc.) You should explain the science involved (at least at a conceptual level), discuss how that is presented in the works being referred to, noting commonalities and differences, and how those presentations relate to the larger paradigm/goals of the author. (3-5 pages.)
- Analysis of at least two books, films, or other cultural artifacts focused on a historical or contemporary scientific controversy that look at it from different perspectives. Your paper and presentation will discuss the science involved, its social and cultural context, and different perspectives through which it is understood. This includes analyzing and critiquing the perspectives of the authors of the works analyzed—assumptions, paradigm, intended audience, methods, choices of what to include and what to leave out, quality of the science, rhetorical style, etc. As part of this, you will need to identify the perspective that you are operating out of and at least a brief justification for it. (10-20 pages).
- Class presentation on your study (12-15 minutes).

Grading

The breakdown in the worth of each assignment is in the chart below. For each assignment, you will be provided with specific instructions and a general-level grading rubric to help you better understand the expectations.

Class participation	10%
Analysis of assigned readings (4)	5% each
Comparison/contrast paper	15%
Project proposal	5%
Final (artifact analysis) paper	40%
Class presentation	10%

‡ Will read selections from this work.

Schedule of the semester

Week	Topics	Reading
1	Overview, introducing Galileo	<i>Galileo's Daughter</i>
2	Galileo's life and culture	<i>Galileo's Daughter</i>
3	The astronomical models	<i>Dialogue; You Talkin' to Me?</i>
4	Galileo's discoveries and implications	<i>Dialogue; You Talkin' to Me?</i>
5	Evaluating scientific claims	<i>Setting Aside All Authority; You Talkin' to Me?</i>
6	Cultural and philosophical underpinnings	<i>On the Heavens</i> , handouts
7	Scientific and cultural impacts	<i>Galileo's Daughter; A History of the Warfare</i>
8	Rhetoric and Paradigms	<i>A History of the Warfare; You Talkin' to Me?</i>
9	Explore different controversies and select topic	<i>You Talkin' to Me?</i> ; handouts
10	Individual study/group discussions	handouts
11	Individual study/instructor conferences	Individual readings
12	Preliminary presentations	Individual readings
13	Individual study/instructor conferences	Individual readings
14	Formal student presentations	
Final	Formal student presentations	

Classroom policies

Respecting others: By the nature of this course, you will likely interact with others who may hold a different position on a topic that can significant in a person's own sense of identity. Our goal is to develop our capacity to have meaningful, productive communication across different perspectives. You are encouraged to discuss those differences and to argue for your position, but it is essential that this be done in a respectful, considerate manner, which will be discussed more during the semester. Failure to adhere to expectations will result in consequences, up to being dismissed from the class.

Attendance: Class participation is essential to this course, both for you and for your fellow students. You must attend and participate in all class sessions unless you have a good, valid reason for not being in class. If you must miss class, you should notify the instructor in advanced for previously scheduled absences and as soon as possible for unscheduled ones. You will still be responsible for finding out what went on during class and any work done.

Academic integrity is expected of all students. All work you submit must be your own. Quotes and other material from other authors must be properly cited. Significant plagiarism or relying on others to do your work for you is grounds for immediate dismissal from the course and receiving a failing grade.

Late policy: I reserve the right to refuse to accept any late assignments without a documented, valid excuse. However, in most cases I will allow it with an appropriate late penalty on the score. It is your responsibility to ask.

Disability statement: In compliance with University policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, 1074. The phone number is 270.745.5004 [270.745.3030 V/TTY] or email at sarc@wku.edu. Please do not request accommodations directly from the professor or instructor without a faculty notification letter (FNL) from The Student Accessibility Resource Center.

Guidelines for Applying to Colonnade

1. In general, a **new** course must be approved by UCC before it can be considered for Colonnade.

The **exception** to this rule are **new** courses being designed and proposed **specifically** for inclusion in the WKU Colonnade program.

Courses designed primarily to be included in the Colonnade program must be pre-approved by the Colonnade Committee as meeting unique Colonnade requirements *prior* to being acted on by the university's Undergraduate Curriculum Committee.

These courses must state that this course is being designed specifically for the Colonnade program in item 4.1. of the Undergraduate Curriculum Committee *New Course Proposal Form*.

2. There can be no prerequisites placed on courses that are in the Foundations or Explorations categories. **On a case-by-case basis the Colonnade Committee will make exceptions to this rule. The applicant must demonstrate that the prerequisite is not for the purpose of fulfilling a particular major or minor program, but is reasonable for a general education student.**
3. All prerequisites for Connections courses must already be in the Colonnade program prior to the submission of the application.
4. All equivalent ~~and cross-listed~~ courses must be approved **concurrently**.
5. Courses that are ~~cross-listed and/or~~ equivalent must have identical learning objectives and the same assessment strategies.
6. A department [as defined by course prefix] can offer Explorations course(s) in only one category.
7. No one course may count towards the fulfillment of two Colonnade requirements.
8. Colonnade courses in any category must appeal to a broad audience, not just to majors and potential majors. When reviewing proposals, the Colonnade Committee will consider the likelihood of non-majors taking the proposed course. If it appears that the course is geared to (potential) majors, the committee may ask for revisions to broaden the course appeal.
9. Courses in the Connections category may be turned down if they do not meet the interdisciplinary nature of the criteria. This is particularly relevant to the 200-level courses applying for a Connections category.
10. Courses that have restricted sections can apply only if the number of seats restricted is no more than 25% of the total seats available for the course.
11. **Courses in the Connections category will be taught at least three times. This applies to the sub-categories Local to Global, Social and Cultural, and Systems. It does not apply to International Experience.**