

Department THEA

Course Number 261

Course Name: Science on the Stage

Check box for Honors course consideration ☐

Submission Checklist

Proposal X

Syllabus X

UCC Proposal for new course \_\_\_\_\_

**AREA OF INQUIRY**

**CREATIVE EXPRESSIONS**

---

This form must be submitted to the Liberal Learning Council as part of the submission process.

Please attach a proposed syllabus for this course and the Undergraduate Curriculum Course Proposal Form, if new course.

---

**DEADLINE FOR PROPOSALS: 1 October 2006**

---

Please answer the following questions:

**Check Only One:**

X This course is an existing course (in the current curriculum) that we are now proposing for this Area of Inquiry.

◇ This is a new course that we are now proposing for this Area of Inquiry.

1. Name and contact information of the curriculum point person for the department administrating this course.

Steven Breese: [sbreese@stevenbreese.org](mailto:sbreese@stevenbreese.org) 4-8825

2. In any given semester, how many sections of this course is your department willing to offer?

Two

3. Why is this course being offered/what is it designed to achieve (Course purpose/goal)?

This course grew out of Prof. Gillman's research and scholarship of dramatic works, which explore science and mathematics as a central dramatic metaphor. This course embraces the spirit of the liberal learning philosophy by exploring the arts, humanities, sciences, and mathematics through these innovative contemporary dramatic works. This course is designed to show through the study and research of these dramatic works the interdisciplinary nature of theatre and these particular "science and mathematics" plays. It is important to note that many of these dramatic works explore the historical ramifications of scientific and mathematical discoveries and research.

4. Check the objectives below that the course will address. The first objective is required and every proposal must include at least one more objective from the list below.

- X a.) Examine selected example(s) of creative expression in terms of artistic, philosophical, cultural and/or psychological issues (**required**)
- X b.) Discuss the life of creative expressions and/or their originators
- X c.) Compare the role and/or meaning of creative expressions among cultures and/or historical periods
  - d.) Distinguish multiple approaches toward comprehending, creating, and evaluating creative works
- ◇ e.) Apply technical language in developing original ideas or argument
- ◇ f.) Demonstrate skills necessary to produce works of creative expression

5. Briefly explain how this class addresses the objectives checked in #4. Be sure to indicate the objective by its letter. A course may cover more than two objectives.

Objective a & b: The major objective of the course is an in-depth analysis of twelve dramatic works written by a variety of playwrights within a variety of dramatic styles. Since most of these works are based on the life and work of known scientists and mathematicians, the philosophical, historical, cultural and psychological ramifications of their actions and discoveries take major dramatic focus in most of these plays. For example, plays such as *Copenhagen*, *Breaking the Code*, and *QED* deal with the consequences of the atomic bomb on society and the scientists involved.

Objective c: One of the best examples I can give of how this course compares meaning among cultures and/or historical periods is the example from above. Three of the twelve plays the students will read, *Copenhagen*, *Breaking the Code* and *QED* all explore the lives of scientists from different countries as they face the consequences of the atom bomb. In *Copenhagen*, Niels Bohr and Werner Heisenberg confront the prospect of Hitler building the atomic bomb before the allies. In *Breaking the Code*, English mathematician Alan Turing works secretly at Blechley Park to stop the German war machine while in *QED*, American physicist, Richard Feynman examines his work on the Manhattan Project. These three dramatic works explore the creation of atomic bomb from a variety of cultural and historic prospective giving the student a much more multidimensional view of this profound moment in history.

6. Course Assessment: **Check below how this course will accomplish the objectives in #5(choose at least one).**

- x Participating in class discussion and debate
- x Engaging in teamwork and other collaborative exercises
- x Writing analytical or evaluative papers, perhaps incorporating original research
- x Making oral presentations
- ◇ Creating an artistic product or a performance
- ◇ Participating in fieldwork
- ◇ Other means – please identify

7. Attach a proposed syllabus, which includes a statement of purpose, course objectives, and how these objectives will be accomplished.

8. Explain how this course connects to Vision 2010 – the CNU Strategic Plan.  
(<http://www.cnu.edu/Vision2010> The links are down the left side of the page.)

#### Goal A: Provide an intellectually challenging and dynamic liberal learning curriculum.

- Ensure liberal learning within the core curriculum, across the disciplines and within each major.

This course encourages students to explore the interconnectedness between the arts, humanities, sciences and mathematics by exploring the life and works of known scientists and mathematicians. These plays encourage the students to view science and mathematics through the prism of human behavior in the hope of deepening their understanding of the human condition.

#### 📌 Goal C: Foster independent student learning.

- Provide learning opportunities that cultivate a desire for reading and further inquiry.
- Cultivate and support undergraduate research and public presentations of the findings.
- Promote and foster artistic creativity and public presentations in the fine and performing arts.

In the one semester I taught this course as a special topics class, I was amazed at how interested students became in the subjects of science and mathematics as they read plays about the lives and work of known scientists and mathematicians. One student became so engaged by the life of mathematician, Alan Turing that she read a biography of his life and gave a presentation on him at the Paidea Conference. This paper presentation included a reading from the play, *Breaking the Code*.

#### 📌 Goal D: Connect liberal learning to ethical conduct and civic responsibility .

- Encourage responsible leadership.

In many of these plays, scientists and mathematicians are confronted with ethical dilemmas, which force them to ask larger cultural and social questions. Experiencing these situations and struggles through the drama helps student frames their own opinions and understanding of these circumstances and how to they might respond in the future.

## Course Description (representative syllabus from Fall 2005)

- A. Name/Number of Course: THEA 261 Science on the Stage  
B. Credit Hours/Section: 2xx / Section 01  
C. Course Meets: TTH 14:30-15:45 pm  
D. Course Location: FERG #220  
E. Course Description/Overview:

*This course will explore through reading, discussion and research the symbiotic relationship between the sciences and the performing arts, and specifically, what unique factors make the dramatic text and the theatre an ideal medium to tell the challenging story of scientists and scientific knowledge. As E.O. Wilson states in his 1998 book Consilience, "The greatest enterprise of the mind has always been and always will be the attempted linkage of the sciences and the humanities". This class will explore the cultural factors and paradigm shifts within the scientific and artistic communities that have created a flowering of contemporary dramatic works such as *Arcadia*, *Proof*, and *Copenhagen* that explore the "Scientist" and "Scientific Knowledge" as a central dramatic metaphor. In a speech given at the Massachusetts Institute of Technology in late 1993, Salman Rushdie stated that, "Many writers of my generation have felt that in many ways the cutting edge of the new is to be found in the sciences." Both the Wilson and Rushdie quotes exemplify a call and response that has been taking place between the scientific and artistic communities for decades. The call of the scientific community is to humanize their unique story. In turn, the artist communities have responded by finding creative ways to express these emerging ideas to their audiences.*

- F. Prerequisites: None

## II. Professor Information

- A. Name: Denise Gillman  
B. Office Location: FERG A-137  
C. Telephone: 594-7262  
D. Fax Number: 594-7389  
E. Email: dgillman@cnu.edu  
F. Office Hours: Mon. & Wed. 10:10:45, TTH 1-2:15, T 4-5:30  
G. Instructional Methods: Seminar Style

## III. Course Textbook and Supplies

1. *The Craft of Research* (2<sup>nd</sup> Ed.) by Wayne C. Booth, Gregory G. Colomb & Joseph M. Williams
2. *Arcadia* by Tom Stoppard
3. *An Experiment with an Air Pump* by Shelagh Stevenson
4. *Humble Boy* by Charlotte Jones
5. *Oxygen* by Carl Djerassi and Ronald Hoffmann
6. *Breaking the Code* by Hugh Whitmore
7. *Copenhagen* by Michael Frayn
8. *Galileo* by Bertolt Brecht
9. *Rosencrantz and Guildenstern are Dead* by Tom Stoppard
10. *Q.E.D* by Peter Parnell
11. Cheap Spiral Notebook (100 pages)

### Supplemental reading:

*Great Men of Science* Nos. 21 & 22 by Glen Berger  
*Blinded by the Sun* by Stephen Poliakoff  
*God and Stephen Hawking*

## IV. Course Objectives:

- A. Read and analyze a variety of "science plays."
- B. Explore the process of research from a broad perspective encompassing both performance and scholarly research.
- C. Consider the scientific and cultural significance of these works.

D. Explore the question, What is a "science play"?

Nick Ruddick in his article, *The Search for a Quantum Ethics* defines a "science play" this way, "Though not science fiction by any usual modern definition of this term, the science play-primarily realistic, though capable of incorporating fantastic elements-functions in a similar way to Wellsian scientific romance a century ago." Like H.G. Wells' *The Time Machine* and *The Island of Doctor Moreau*, these plays explore such topics as "ethical issues raised by scientific developments, dramatize aspects of the lives and work of famous scientists, explores the human implications of scientific ideas, and how cultural pressures affect scientific research".

V. **Course Content:**

Play readings, discussion, guest speakers, video and live presentation, individual and group research exercises and projects, final and field trips

VI. **Course Attendance Policy**

- A. Attendance is expected at all classes and examinations.  
3 unexcused absences = full letter loss on Final Grade
- B. Make-up work will be allowed without penalty for excused absences only. For unexcused absences there will be a full letter loss on the evaluation of that assignment for each class that it is tardy. Scheduled class activities will take precedence over any make-up work. **There is no make-up on quizzes for excused or unexcused absences.** If a student misses a quiz, he/she will be encouraged to complete extra credit work to make up that quiz. **Worksheets will only be accepted on the day that they are due.**
- C. The only excused absences are as follows and must be corroborated in writing by the proper authority.
  - 1. Personal illness that requires a doctor visit. (Must have a note)
  - 2. Serious illness or death of a close family member.
  - 3. Natural disaster such as hurricane, flood, or civil unrest.
  - 4. Court related obligations such as jury duty, appearance, deposition or subpoena.
  - 5. University sanctioned activities.
- D. An incomplete is given only in a case where the student is passing and can document absences.

Note: Any student who believes that she or he is disabled should make an appointment to see me to discuss your needs. In order to receive an accommodation, your disability must be on record in the Office of Career and Counseling Services - 594-7047, Student Center 146.

VII. **Course Evaluation Plan (Denoted by percentages)**

A.	Research Notebook/Exercises/Participation	20%
B.	Research Project # 1	15%
C.	Research Project # 2	20%
D.	Research Project # 3	20%
E.	Final (Oral Presentations)	<u>25%</u>
		100%

- A. **Participation:** Attendance & active participation in classroom discussions is expected.  
**Mainstage Production:** Students are required to attend the Theatre CNU Mainstage productions of *Proof*. Please refer to the brochure for times and dates.  
**Research Notebook:** Students are required to keep a notebook that records all of their notes and research work on all projects.

- B-E. **Research Projects & Final**  
Specific guidelines will be given out in class.

**Course Grade Scale**

- A 90 - 100
- B 80 - 89

C 70 - 79

D 60 - 69

F 0 - 59

Writing Center: Because all writers can benefit from readers' responses to their work, I strongly encourage-and may occasionally require-you to visit the CNU Writing Center. Consultants there can help you at any stage of the writing process, from invention, to development of ideas, to polishing a final draft. The Center is not a proofreading service, but its consultants can help you to recognize and correct grammar and punctuation errors in your work. The Writing Center is in Radcliff 110; you can call (594-7684) or email ([wcenter@cnu.edu](mailto:wcenter@cnu.edu)) for an appointment or just drop in. Go as early in the writing process as you can, and go often! I will announce hours in class. The Writing Center's web site provides handouts and links to other writing resources on the web: it is available at [http://www.cnu.edu/wcenter/](http://www.cnu.edu/wcenter/index.htm) index.htm.

Academic Honesty: Plagiarism is the stealing or passing off as your own the writings or ideas of someone else. Examples of plagiarism include, but are not limited to, quoting, summarizing, or paraphrasing ideas without giving credit to their source, submitting as your own work that has been copied or purchased from another student or other source, and permitting someone else to revise or edit a paper to the extent that it is no longer your own work. Plagiarism in essays cannot be allowed and will result in a zero for that assignment and may result in an F for the course. It is your responsibility to know what plagiarism is and how to avoid it. I expect that you will uphold the CNU Honor Code, below, in your preparations for this course.

Christopher Newport Honor Code: "On my honor, I will maintain the highest possible standards of honesty, integrity, and personal responsibility. That means I will not lie, cheat, or steal and as a member of this academic community, I am committed to creating an environment of respect and mutual trust."