

GENERAL STUDIES COURSE PROPOSAL COVER FORM

Course information:

Copy and paste **current** course information from [Class Search/Course Catalog](#).

College/School	CLAS	Department/School	English
Prefix:	EN G	Number: 469	Title: Science and Literature (Topic: Science & Literature, 1770-1920) Units: 3

Course description: **Historical and theoretical links between science and literature, from Francis Dacon to the present, examined in cultural context. May be repeated for credit when topics vary.**

Is this a cross-listed course? No Yes If yes, please identify course(s): _____

Is this a shared course? No Yes If so, list all academic units offering this course: _____

Note- For courses that are crosslisted and/or shared, a letter of support from the chair/director of each department that offers the course is required for each designation requested. By submitting this letter of support, the chair/director agrees to ensure that all faculty teaching the course are aware of the General Studies designation(s) and will teach the course in a manner that meets the criteria for each approved designation.

Is this a **permanent-numbered course with topics**? No Yes

If yes, each topic requires **an individual submission**, separate from other topics.

Requested designation: HU

Mandatory Review: No

Note- a separate proposal is required for each designation.

Eligibility: Permanent numbered courses **must** have completed the university's review and approval process. For the rules governing approval of omnibus courses, contact Phyllis.Lucie@asu.edu.

Submission deadlines dates are as follow:

For Fall 2020 Effective Date: October 10, 2019

For Spring 2021 Effective Date: March 5, 2020

Area proposed course will serve:

A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study. It is the responsibility of the chair/director to ensure that all faculty teaching the course are aware of the General Studies designation(s) and adhere to the above guidelines.

Checklists for general studies designations:

Complete and attach the appropriate checklist

- [Literacy and Critical Inquiry core courses \(L\)](#)
- [Mathematics core courses \(MA\)](#)
- [Computer/statistics/quantitative applications core courses \(CS\)](#)
- [Humanities, Arts and Design core courses \(HU\)](#)
- [Social-Behavioral Sciences core courses \(SB\)](#)
- [Natural Sciences core courses \(SQ/SG\)](#)
- [Cultural Diversity in the United States courses \(C\)](#)
- [Global Awareness courses \(G\)](#)
- [Historical Awareness courses \(H\)](#)

A complete proposal should include:

- Signed course proposal cover form
- Criteria checklist** for General Studies designation being requested
- Course catalog description
- Sample syllabus for the course
- Copy of table of contents from the textbook and list of required readings/books


It is respectfully requested that proposals are submitted electronically with all files compiled into one PDF.

Contact information:

Name: Mark Lussier E-mail: Mark.lussier@asu.edu Phone: 5-7894

Department Chair/Director approval: (Required)

Chair/Director name (Typed): Krista Ratcliffe Date: 10 March 2020

Chair/Director (Signature): 

Arizona State University Criteria Checklist for
HUMANITIES, ARTS AND DESIGN [HU]

Rationale and Objectives

The humanities disciplines are concerned with questions of human existence and meaning, the nature of thinking and knowing, with moral and aesthetic experience. The humanities develop values of all kinds by making the human mind more supple, critical, and expansive. They are concerned with the study of the textual and artistic traditions of diverse cultures, including traditions in literature, philosophy, religion, ethics, history, and aesthetics. In sum, these disciplines explore the range of human thought and its application to the past and present human environment. They deepen awareness of the diversity of the human heritage and its traditions and histories and they may also promote the application of this knowledge to contemporary societies.

The study of the arts and design, like the humanities, deepens the student's awareness of the diversity of human societies and cultures. The arts have as their primary purpose the creation and study of objects, installations, performances and other means of expressing or conveying aesthetic concepts and ideas. Design study concerns itself with material objects, images and spaces, their historical development, and their significance in society and culture. Disciplines in the arts and design employ modes of thought and communication that are often nonverbal, which means that courses in these areas tend to focus on objects, images, and structures and/or on the practical techniques and historical development of artistic and design traditions. The past and present accomplishments of artists and designers help form the student's ability to perceive aesthetic qualities of art work and design.

The Humanities, Arts and Design are an important part of the General Studies Program, for they provide an opportunity for students to study intellectual and imaginative traditions and to observe and/or learn the production of art work and design. The knowledge acquired in courses fulfilling the Humanities, Arts and Design requirement may encourage students to investigate their own personal philosophies or beliefs and to understand better their own social experience. In sum, the Humanities, Arts and Design core area enables students to broaden and deepen their consideration of the variety of human experience.

Revised April 2014

Proposer: Please complete the following section and attach appropriate documentation.

ASU - [HU] CRITERIA			
HUMANITIES, ARTS AND DESIGN [HU] courses must meet <i>either</i> 1, 2 or 3 <i>and</i> at least one of the criteria under 4 in such a way as to make the satisfaction of these criteria A CENTRAL AND SUBSTANTIAL PORTION of the course content.			
YES	NO		Identify Documentation Submitted
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Emphasizes the study of values; the development of philosophies, religions, ethics or belief systems; and/or aesthetic experience.	Syllabus
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Concerns the interpretation, analysis, or creation of written, aural, or visual texts; and/or the historical development of textual traditions.	Syllabus
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Concerns the interpretation, analysis, or engagement with aesthetic practices; and/or the historical development of artistic or design traditions.	Syllabus
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. In addition, to qualify for the Humanities, Arts and Design designation a course must meet one or more of the following requirements:	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	a. Concerns the development of human thought, with emphasis on the analysis of philosophical and/or religious systems of thought.	Syllabus
<input type="checkbox"/>	<input type="checkbox"/>	b. Concerns aesthetic systems and values, especially in literature, arts, and design.	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	c. Emphasizes aesthetic experience and creative process in literature, arts, and design.	Syllabus
<input type="checkbox"/>	<input type="checkbox"/>	d. Concerns the analysis of literature and the development of literary traditions.	
		THE FOLLOWING TYPES OF COURSES ARE EXCLUDED FROM THE [HU] DESIGNATION EVEN THOUGH THEY MIGHT GIVE SOME CONSIDERATION TO THE HUMANITIES, ARTS AND DESIGN:	
		<ul style="list-style-type: none"> • Courses devoted primarily to developing skill in the use of a language. 	
		<ul style="list-style-type: none"> • Courses devoted primarily to the acquisition of quantitative or experimental methods. 	
		<ul style="list-style-type: none"> • Courses devoted primarily to teaching skills. 	

Course Prefix	Number	Title	General Studies Designation
ENG	469	Literature & Science, 1770-1920	Hu

Explain in detail which student activities correspond to the **specific** designation criteria. Please use the following organizer to explain how the criteria are being met.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
1	The dates targeted bring into view the dynamic interchanges across cultural forms occasioned by emergence of science as governing episteme. The spectrum of responses involves (and included) include every element kisted in the criteria.	Supported by course description & by the range of depth of the reading listed in the daily schedule of reading.
2	I originally designed this course and offered it for the first time. I also initially designed the assignments to meet L1 standards: increasingly difficult/extended writing assignments interspersed with exams that assess qualitativee and quantitative performance.	Most easily seen in the course requirements section of the syllabus, although the arrangement of reading and schedule of assignment submission supports this as well.
3	I would argue that the entire course description and requirements makes this clear. However, the overlay of three powerful novels to supplement the archaeology of scientific discourse confronted daily confirm this element of the class.	See "Course Requirements" and "Description of assignments."
4A&C	The reading repeatedly showcases the way scientific principles an thought challenge/confront established forms of belief and knowledge. This confrontation equally emerges in the visual arts (painting and printing) and other cultural forms of consumption (e.g. advertising and jouranlism).	The main textbook was specifically designed to pursue such an archaeology of discourse and knowledge to support the analysis of the revolution in science (from astronomy to zoology and everything between).

ENGLISH 469:

Science & Literature, 1770 - 1920

Professor Mark Lussier

“It would be a denial of the dignity of human nature and the relative importance of the faculties with which we are endowed, were we to condemn at one time austere reason engaged in investigating causes and their mutual connections, and at another that exercise of the imagination which prompts and excites discoveries by its creative power.” (Alexander von Humboldt, *Cosmos* 78)

I. Needful Information

Class	Tu & Th 10:30-11:45, PVW 163
Office/Hours	RBH 357 = Tu&Th 9:00-10:00 + Th 1:00-3:00 ¹
Phone	(480) 965-7894
Email	mark.lussier@asu.edu

II. Course Description

The renowned natural philosopher/scientist Alexander von Humboldt uttered the words found in the epigraph (above) at the end of his introduction to the massively influential five-volume work *Cosmos*, published in 1845, which attempted nothing less than an authoritative summation of all physical elements comprising the cosmos (from celestial dynamics to linguistic/semiotic systems), yet his argument for the continued integration of ‘reason’ and ‘imagination’ passionately voiced above had already taken on the character of a rearguard action, since the rationally driven sciences, through ever greater sub-disciplinary specialization and with ever greater reliance on experimental outcomes represented through mathematical formalism, had moved well beyond the skills of most ‘ordinary’ people. This growing alienation from the language and outcomes of the physical sciences, when coupled with an increasingly uneasy sense among human forms of ‘imagination’ that beneath scientific investigation lurked problematic ethical elements, also fueled a growing chasm between the humanities and the sciences. This view was forcefully articulated by C. P. Snow in his Rede lectures delivered at Cambridge University (in 1959), who suggested that these arenas of human knowledge had crystallized into “two cultures” whose adherents “had almost ceased to communicate at all” (2). The emergence of this ‘two cultures’ model forms the core of analytic concern for our class this semester, and our method will be to critique crucial texts (both scientific and literary) across the nineteenth century to map a counter-argument, one more in line with the spirit of Humboldt but one equally manifest in the writing of philosopher-physicists at the vanguard to physical description at the beginning of the twentieth century (e.g. the theory of relativity, the principles of uncertainty, and the dynamics of complementarity).

¹ I will also make arrangements to meet by appointment at other times when necessary.

As you will note, the course is organized into four segments to better underwrite the method mapped out above. First, the class will pursue an archaeology of scientific knowledge and writing during the Romantic and Victorian eras, a temporal span (most historians agree) giving rise to the growing divide between the humanities and sciences. Second, we will examine works of Romantic poetry that oppose and/or engage scientific knowledge, often appropriating both its knowledge and its symbolism to express a ‘lyricized science’ that looks backward to Lucretius’s *On the Nature of Things* but which also draws upon the poetic works of Erasmus Darwin (e.g. *The Temple of Nature*), the grandfather of Charles Darwin. Third, the increasing cultural anxiety over scientific methods and ends reaches a crescendo in the nineteenth-century novel, and beginning with the most influential work of Romanticism, *Frankenstein*, we will examine this anxiety. Finally, as we approach both the end of semester and the end of the nineteenth century, we will take a ‘quantum’ leap into two works deeply engaged with science yet not particularly antagonistic to theoretical positions emanating from the physical sciences themselves: Abbott’s *Flatland*, and Carroll’s *Alice and Wonderland*, which will be contextualized by Bohr (complementarity/atomic theory), Einstein (relativity) and Heisenberg (principles of uncertainty).

III. Course Requirements

This specific course is designed to satisfy upper division (pan-university) and theory requirements (in the English major), as well as ‘to bridge’ areas of knowledge (arts, humanities and physical sciences) within the College of Liberal Arts and Sciences. As well, the course will further satisfy elements within the General Studies structure, and its written products mirror the description of the “L” designation—escalating scale and difficulty of written work across the semester. You will write three papers across the semester, and these assignments are described at the end of the syllabus. I am attempting to go ‘as paperless as possible’ again this term, and working through our canvas platform for the class, we will engage in on-line discussions of topics posted periodically. For each posted question or topic, students must generate an initial response and respond to one other posting. Although I trust your commitment to the class, I will nonetheless administer two summative exams (a midterm and final) to offer some motivation for maintaining the reading schedule (which I believe to be both rigorous and fair). My experience indicates that those present perform better, and those prepared and present perform best. Thus, I will take attendance most days (although you are allowed two unexcused absences). Excessive absences (3+ without communication and documentation will can impact your grade for the class); however, I also recognize the intrusion of the unexpected and uncertain, so the best way to treat absences (except for your two ‘freebies’) is to stay in touch with me. Your grade, the traditional range of A to E for the class, will be calculated in the following way:

Attendance/Participation	10 points
Essay 1 (Diagnostics)	10 points
Essay 2 (Comparative)	15 points
Essay 3 (Analytic/Research)	25 points

I have two professional obligations this semester (Fall 2020). I head to the UK (in mid-September) to deliver plenary addresses at the “Global Blake 2020” conference at Lincoln University and at the Tate Gallery. The paper reflects some of the concerns explored in this class: “William Blake at the Event Horizon: Strange Attractors, Visionary Physics, and Quantum Consciousness.” I’m also delivering another paper at the International Conference on Romanticism (in late October) entitled “Blake’s “The River of Life”: Flowing Semiotics and the Currents of *Milton*.”

I anticipate a semester with hard work and overt pleasure (cf. Wordsworth’s reference to “poets and men of science” in his “Preface” to *Lyrical Ballads*). I look forward to working with you this semester. Okay, let’s get to work!

IV. Class Conduct, Student Etiquette, & Student Support

In generally, attendance will be enfolded within “Participation,” although excessive absences (x 2+) can lead to grade reduction (see above). In terms of class etiquette, once the class begins, students are required to turn off cell phones and other vehicles of social media (e.g. Facebook, Twitter, etc.) If students want to record a lecture, they must clear this in advance. ASU classrooms are designed to function as safe spaces for open inquiry and collegial interactions, and the university has rules governing threatening behavior, sexual harassment and other matters, some of which fall within federal Title IX rules.² If you wish to discuss such situations in private, the link to ASU Counseling Services is included here. Given the number of writing assignments, students should also be aware of policies regarding academic integrity, including plagiarism policies; (here are the links related to this statement of expectations for class etiquette and student conduct (please review these policies):

A. SSM 104-2: <https://www.asu.edu/aad/manuals/ssm/ssm104-02.html>

B. SSM 201-10: <https://www.asu.edu/aad/manuals/ssm/ssm201-10.html>

C. Title IX: <https://sexualviolenceprevention.asu.edu/faqs>

D. Provost’s website: <http://provost.asu.edu/academicintegrity>

E. Counseling Services: <http://eoss.asu.edu/counseling>

² Here’s the official language required by the Office of the Provost. “Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://sexualviolenceprevention.asu.edu/faqs>. As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, <https://eoss.asu.edu/counseling>, is available if you wish to discuss any concerns confidentially and privately.”

F. Disability: <https://eoss.asu.edu/drc/policies> + <https://eoss.asu.edu/drc/services>

Last Concerns: If you are tempted to plagiarize any of the written work, you should know that such tracks can be easily detected by current programs and technologies. Please review the policy on academic dishonesty:

<https://clas.asu.edu/current-students/student-academic-integrity-resources>

<https://provost.asu.edu/academicintegrity>

V. Textbooks & On-Line Texts

Texts (ASU Bookstore + Online)

Abbott, Edwin. *Flatland*

Blake, William. *Milton*

Lussier, Mark. “Blake’s Vortex: The Quantum Bridge in *Milton*” (pdf)

Otis, Laura. *Literature and Science in the Nineteenth Century* (LS)

Shelley, Mary. *Frankenstein, or The Modern Prometheus*

Shelley, Percy B. *Shelley’s Poetry and Prose*

Stevenson, Robert Louis. *The Strange Case of Dr. Jekyll and Mr. Hyde*

Wells, H. G. *The Island of Dr. Moreau*

On-Line Texts

Bohr, Niels. “Atoms and Human Knowledge”

(www.nhn.ou/Bohr-lecture-OU-1957)

Carroll, Lewis. *Alice in Wonderland*

(www.literature.org/authors/carroll-lewis)

Einstein, Albert. “The World as I See It”

(www.aip.org/history/einstein)

Heisenberg, Werner. “The Implications of Uncertainty”

(www.aip.org/heisenberg/p08.htm)

Lussier, Mark. “Wave Dynamics as Primary Ecology in Shelley’s *Prometheus Unbound*”

(<http://users.ox.ac.uk/~scat0385/physics.html>)

VI. Reading Schedule

08/25

Overview of Class Structure and Concerns

An Archaeology of Scientific Writing in the 19th Century

08/27

Laura Otis, “Introduction” (vi-xlii in LS); “Prologue: Literature and Science,” (Edgar Allan Poe, John Tyndall, T. H. Huxley, and Matthew Arnold) + Lecture = “The Language of Science from the Royal Society to Romanticism”

09/01

John Tyndall, “On the Scientific Use of the Imagination” (LS 68); Sir William Herschel, “On the Power of Penetrating into Space by Telescopes” (LS 43); Sir John Herschel, “Outlines of Astronomy” (LS 51); **Faraday, “Experimental Researches in Electricity” (LS 55)**

09/03

James Clark Maxwell, all selections (70); William Thomson, Lord Kelvin, “The Sorting Demon of Maxwell” (79); Herman von Helmholtz, “On the Conservation of Forces” (LS 121)

09/08

Luigi Galvani, “From *De Viribus Electricitatis* (LS 135); Sir Humphry Davy, “From *Discourse, Introductory to a Course of Lectures on Chemistry*” (LS 140); Babbage, “From *On the Economy of Machinery and Manufactures*” (LS 109)

09/10

Jean Baptiste de Lamarck, “From *Zoological Principles*” (LS 240); Sir Charles Lyell, “From *Principles of Geology*” (LS 246); William Whewell “From *Philosophy of the Inductive Sciences*” (LS 252)

09/15

Charles Darwin, “From *Origin of the Species*” and “From *The Descent of Man and Selection in Relation to Sex*” (LS 258, 308); Thomas Henry Huxley, *On the Physical Basis of Life* (LS 273); Hebert Spencer, “From *Principles of Biology*” (LS 285)

09/17

Thomas Laycock, “From *Mind and Brain*” (LS 349); Henry Maudsley, “From *Body and Mind*” (LS 364); William James, “From *Principles of Psychology*” (LS 373);

Lyricized Science: William Blake and Percy Shelley

09/22

William Blake, *Milton*; Lussier, “Blake’s Vortex: The Quantum Bridge in *Milton*”

09/24

William Blake, *Milton* (continued); Frances Power Cobbe, *Unconscious Cerebration: A Psychological Study* (LS 424);

09/29

P. B. Shelley, *Queen Mab* (15); Earl R. Wasserman, “The Poetry of Skepticism” (570)

10/01

P. B. Shelley, *Queen Mab* (15); Kenneth Neil Cameron, “Philosophy, Religion, and Ethics” (580)

10/06

P. B. Shelley, *Alastor, or The Spirit of Solitude*; Michael Ferber, “*Alastor*”

10/08

P. B. Shelley, *Alastor, or The Spirit of Solitude*; James Cowles Prichard, “From *A Treatise on Insanity*” (LS 337)

10/13

P. B. Shelley, *Prometheus Unbound*, Timothy Webb, “The Unascended Heavens: Negatives in *Prometheus Unbound*”

10/15

P. B. Shelley, *Prometheus Unbound*; Lussier, “Wave Dynamics as Primary Ecology in Shelley’s *Prometheus Unbound*”

The Science of 19th Century Fiction

10/20

Mary Shelley, *Frankenstein*

10/22

Mary Shelley, *Frankenstein*

10/27

Robert Louis Stevenson, *The Strange Case of Dr. Jekyll and Mr. Hyde*; George John Romanes, “From *Mental Evolution in Man*” (LS 279)

10/29

Robert Louis Stevenson, *The Strange Case of Dr. Jekyll and Mr. Hyde*; Cesare Lombroso, “From *The Criminal Man*” (LS 516)

11/03

H. G. Wells, *The Island of Dr. Moreau*; Claude Bernard, “From *An Introduction to the Study of Experimental Medicine*” (LS 203)

11/05

H. G. Wells, *The Island of Dr. Moreau*; Sir James Paget, “Vivisection: Its Pains and Its Uses” (LS 209)

11/10

Research Day

11/12

Mark Lussier, “Blake’s Golgonooza: London and/as the Eternal City of Art,” International Conference on Romanticism (New York)

The Leap Beyond Duality

11/17

Edwin Abbott, *Flatland: A Romance of Many Dimensions*; Augustus de Morgan, “From *Formal Logic*” (LS 19)

11/19

Edwin Abbott, *Flatland: A Romance of Many Dimensions*; Augustus de Morgan, “From *Formal Logic*” (LS 19)

11/24

Lecture: tba

11/26

Happy Thanksgiving

12/01

Lewis Carroll, *Alice in Wonderland*, Lewis Carroll, “From *The Game of Logic*” (LS 32); George Boole, “From *An Investigation of the Laws of Thought*” (LS 24); Albert Einstein, “The World as I See It”

12/ 03

Lewis Carroll, *Alice in Wonderland*; George Henry Lewes, “From *The Physical Basis of Mind*”; Werner Heisenberg, “The Implications of Uncertainty” and Niels Bohr, “Atoms and Human Knowledge” + **Essay #3 due**

12/08

Closing Thoughts

IV. Description of Writing Assignments

Essay 1 (Diagnostic): select one of the following works by Percy Shelley, and write a standard explication (est. 750-1,000 words); your essay should offer a clearly defined thesis, should present primary textual evidence, should evince solid structure, and should be mechanically and grammatically correct. In other words, you should present your most compelling and convincing best critical prose. Your possibilities are:

“Mutability”; “Mont Blanc”; “The Sensitive-Plant” or “The Cloud”

Essay 2 (Comparative): chose one literary work and one scientific work discussed in the first half of the course, and compare and/or contrast their distinctive features; for this essay you should undertake a short-scale research effort, select a critical analytic essay to aid in your reflections, and then write a detailed analysis. Your essay should offer everything mentioned above, and the scale of the paper should be approximately 1,000-1,250 words.

Essay 3 (Research): construct a research topic, and pursue it; you should have a minimum of 10 sources in your final paper, which should be approximately 15-20 pages (the subject must be cleared with me, and I will happily help you construct the project).