LINC101: First Year Writing Seminar
Section K
Energy: from Fossil Fuels to Nuclear Reactors
Fall 2015

Teacher: Dr. Kelly Krieble Office: Room 109, Collier Hall of Science Phone: 610-861-1437 (ext. 1437 on-campus) e-mail: krieblek@moravian.edu	Classroom: CHS 123 MWF 11:45-12:55am
	Office Hours: MWF 9-10am

The disaster at the Japanese Fukushima nuclear power plant in 2011 has brought renewed interest in our energy usage habits coupled with an increasing need to understand the science of energy. This course will examine the wide variety of energy sources available today, focusing on the technologies and addressing concerns such as policy, waste, sustainability, and resources.

Course Description:

The First Year Seminar (FYS) introduces writing as a process that is central to college learning and to life. Each FYS, no matter what the topic, focuses on college-level reading and writing so students will begin to sharpen the critical reasoning skills needed for success in any academic discipline at Moravian College. The subject area focus of each FYS section entails reading and discussing ideas and styles from various academic disciplines, but all sections are the same in their general approach: students will practice both speaking and writing and will work collaboratively in workshop settings. You learn to write by writing and reading, so your teacher will be mostly a facilitator in class, not a lecturer or test-giver.

Goals of the course:

The primary aim of this course is to introduce students to college level reading, writing, and thinking, while incorporating issues and topics relevant to the transition to college. At the end of this course, students will be able to:

- Articulate an understanding of liberal education as it affects one's life now and prepares the individual for the future,
- Use writing as a way to discover new information and insights (writing to learn),
- Demonstrate a process approach to writing,
- Demonstrate competency in writing, including framing questions, posing problems, and synthesizing information to write an academic paper,
- Demonstrate an ability to write effectively for a variety of audiences,
- Gather information for assignments through the use of appropriate technology and evaluate the credibility of sources needed to write an academic paper,
- Read critically and comprehensively to integrate others' ideas with your own,
- Practice behaviors for successful learning including effective study habits, time management, goal setting and coping skills,
- Collaborate with faculty and student advisors to engage with the college community.

Course Texts:

A Sequence for Academic Writing. 5th ed., Laurence Behrens and Leonard Rosen. Pearson, NY, 2012. ISBN: 978-0-025-17288-7

Energy at the Crossroads: Global Perspectives and Uncertainties. Vaclav Smil. MIT Press, 2003. ISBN: 978-0-262-69324-0

Recommended Texts:

A good dictionary and thesaurus

The Bedford Handbook for Writers. 4th ed. Diana Hacker. St. Martin's Press, 1994. ISBN: 0-312-13703-6

Grading Policy:

A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 60%-69%
F = below 60%

Note: It is within the instructor's purview to apply qualitative judgment in determining grades for an assignment or for the course.

Assessment:	**% Weight**
Ungraded writing	20
Group work assessment	10
Graded assignments	50
Peer editing	10
Final Presentation/Poster	10

Students will complete several pieces of writing, formal and informal, graded or ungraded, this semester. Expect to receive suggestions from your instructor or classmates as you develop writing assignments through multiple drafts. Individual conferences, written comments, small group workshops, the College Writing Center—all may be used to help you as you plan, draft, revise, and edit a piece of writing. At least one writing assignment will involve substantial use of Reeves Library. You will improve your information literacy as you learn to develop and investigate a research topic. By the time you complete your FYS, you should be proficient in the following "basic competencies" of information literacy:

- Define a research need
    - Formulate a research topic
    - Determine an information need
- Plan and execute a search for information
    - Identify key terms and concepts
    - Identify the most appropriate sources of information
    - Use Boolean operators and truncation where appropriate
    - Impose limiters (e.g., scholarly vs. popular, date, language)
    - Modify the search based on search results
- Know how and where to find the sources discovered in the search process
    - Determine which sources the library owns or provides access to and retrieve them
    - Request material not owned by the library on Interlibrary Loan
    - Locate material faculty may have put on reserve in the library
- Understand the obligation to credit sources and be able to do so in an appropriate citation style

Academic Honesty Policy:

Moravian College expects its students to perform their academic work honestly and fairly. A Moravian student, moreover, should neither hinder nor unfairly assist the efforts of other students to

complete their work successfully. This policy of academic integrity is the foundation on which learning at Moravian is built.

The College's expectations and the consequences of failure to meet these expectations are outlined below. If at any point in your academic work at Moravian you are uncertain about your responsibility as a scholar or about the propriety of a particular action, consult your instructor.

Your work in this course will be bound by the Moravian College Policy on Academic Honesty (found in the Student Handbook), so please review and study that document. Part of the course will also be devoted to the topic of plagiarism and proper citation of references.

Guidelines for Honesty:

All work that you submit or present as part of course assignments or requirements must be your original work unless otherwise expressly permitted by the instructor. This includes any work presented, be it in written, oral, or electronic form or in any other technical or artistic medium. When you use the specific thoughts, ideas, writings, or expressions of another person, you must accompany each instance of use with some form of attribution to the source. Direct quotes from any source (including the Internet) must be placed in quotation marks (or otherwise marked appropriately) and accompanied by proper citation, following the preferred bibliographic conventions of your department or instructor. It is the instructor's responsibility to make clear to all students in his or her class the preferred or required citation style for student work. Student ignorance of bibliographic convention and citation procedures is not a valid excuse for having committed plagiarism.

You may not collaborate during an in-class examination, test, or quiz. You may not work with others on out-of-class assignments, exams, or projects unless expressly allowed or instructed to do so by the course instructor. If you have any reservations about your role in working on any out-of-class assignments, you must consult with your course instructor. In each FYS class and in the Writing Center, we try to establish a community of writers who can review and provide helpful criticism of each other's work. Although no students in your class or in the Writing Center should ever be allowed to write your paper for you, they are encouraged to read your work and to offer suggestions for improving it. Such collaboration is a natural part of a community of writers.

You may not use writing or research that is obtained from a "paper service" or that is purchased from any person or entity, unless you fully disclose such activity to the instructor and are given express permission. You may not use writing or research obtained from any other student previously or currently enrolled at Moravian or elsewhere or from the files of any student organization, such as fraternity or sorority files, unless you are expressly permitted to do so by the instructor.

You must keep all notes, drafts, and materials used in preparing assignments until a final course grade is given. In the case of work in electronic form, you may be asked to maintain all intermediate drafts and notes electronically or in hard copy until final grades are given. All these materials must be available for inspection by the instructor at any time.

Plagiarism:

A major form of academic dishonesty is plagiarism, which we define as the use, whether deliberate or not, of any outside source without proper acknowledgment; an "outside source" is defined as any work (published or unpublished), composed, written, or created by any person other than the student who submitted the work (adapted from Napolitano vs. Princeton). Instructors often encourage—and in the case of research essays, require—students to include the ideas of others in their writing. In such cases, students must take care to cite the sources of these ideas correctly (in other words, to give credit where credit is due).

At Moravian, if an instructor suspects plagiarism, the student will be asked to show the notes and drafts contributing to the final version of a paper. The instructor also has the right to review any books or periodicals that were used. The grade for the paper will be suspended until these materials have been reviewed. An instructor who suspects a student of violating the policy on academic

honesty with regard to an assignment, requirement, examination, test, or quiz will consult with the Chair, First Year Seminar, using a blind copy of the work in question, to verify the violation. If the charge is verified, the instructor will, in almost all cases, assign either a grade of zero to the academic work in question or a failing grade in the course in which the violation occurred. The student must be informed in writing of the alleged violation and penalty; a copy of this memo must be sent to the Associate Dean of Academic Affairs.

A student may appeal either a charge of academic dishonesty or a penalty as follows:

First, to the First Year Seminar course instructor.

Next, in the case of a First Year Seminar, to the Chair, First Year Seminar Committee

Next, to the Academic Standards Committee, chaired by the Associate Dean for Academic Affairs.

Assignment Submission (when requested)

When you turn in an assignment you should also include all notes, drafts, and peer responses with the assignment (it's best to put all this in a folder), and include a brief (half-page) analysis of the writing process you undertook:

- ➢ Describe how you wrote the assignment – how long you worked, how difficult or easy it was, etc.
- ➢ Characterize the strengths and weaknesses of the current draft
- ➢ Indicate any issues or questions you would like me to address as I read your assignment

Tardy Assignment Policy

The due dates for each assignment will be stated when the assignment is handed out. Grades for tardy assignments will be reduced by 10% for each day that the assignment is past due.

Final semester exam:

Since most of the work for this class will involve writing assignments throughout the semester, there will be NO semester exam for this course.

Attendance Policy:

Since this course is writing intensive, and will involve in-class writing assignments, attendance is mandatory. You will be allowed one unexcused absence during the semester. For each unexcused absence past the first one your final course grade will be lowered by one grade level (e.g. from a B+ to a B, or from a B- to a C+). To that end, I will take attendance at the beginning of each class period, so make sure you arrive on time.

Academic Support Center:

The Academic Support Center houses Disability Support and Greyhound Tutoring on the first floor of Monocacy Hall and can be reached at 610-861-1401. Greyhound Tutoring provides course-specific tutors to Moravian students, free of charge. If you would like to work with a Greyhound Tutor to boost your academic success, please request a tutor through http://bit.ly/NeedTutorMC (case-sensitive). Plan ahead! It takes 2-3 business days to connect you with a tutor. Please email Dana Wilson (wilsond@moravian.edu), Tutor Coordinator, for more information about tutoring. Please email Laurie Roth (rothl@moravian.edu), Director of Academic and Disability Support, for more information about disability support.

Students who wish to request accommodations in this class for a disability should contact Ms. Laurie Roth, Director of Academic & Disability Support, located on the first floor of Monocacy Hall

(extension 1401). Accommodations cannot be provided until authorization is received from the Academic & Disability Support office.

Students are also encouraged, yet not required, to inform course faculty of those situations that can affect academic performance. Resources may be available to aid students who are experiencing academic difficulty.

It is important to contact the office as soon as possible to enhance the likelihood that such accommodations are implemented in a timely fashion. Any student who wishes to disclose a disability and request accommodations under the Americans with Disabilities Act (ADA) for this course first MUST meet with Ms. Laurie Roth.

The Writing Center:

The Writing Center, on the second floor of Zinzendorf Hall, is there to support the efforts of all writers at Moravian College. The tutors there are students who are good, experienced writers and who are professionally trained to help you improve your writing. They will go over an essay draft with you and guide your understanding of how you might improve that draft. You could also drop by to pick up some of the free handouts on virtually every part of writing: getting started, writing a thesis, developing paragraphs, eliminating wordiness, using commas, and the like. The Writing Center is generally open Monday-Thursday afternoons and Sunday evenings during the semester. The Writing Center is located in a building that is not accessible to persons with mobility impairments. If you need the services of the Writing Center, please call 610-861-1592. You will be required to attend several sessions with writing center tutors, so familiarity with this campus resource is very important.

Student Affairs Sessions and Assignments:

Several classes during the semester will be designated as Student Affairs sessions – your attendance at these is mandatory and ID cards will be checked to ensure your attendance. Please consult the class calendar to note on which days these sessions will occur.

Good luck in the coming year. Should you have any comments about the class during the semester, please feel free to discuss them with me, I will welcome any suggestions for improving the course. Since I am looking for you to do your best work, you should demand excellence from me as well.

Subject to revision

READINGS

(Note: this list of readings has been modified from the course "Energy and Society", ER100/200 and PubPol C184/C284 at the University of California Berkeley, taught by Daniel Kammen, 2010)

In general, articles will be available "on-reserve" in Reeves Library in a large 3-ring binder labeled for our section of LINC101 (section A). You can also access some of them on-line as indicated below.

Study recommendation: Try getting into the habit of looking for energy articles in newspapers, and begin to get a feel for how ubiquitous and far-reaching energy issues are in society. In addition, check the opinion ("OpEd") and editorial pages of your favorite newspapers.

General Energy Readings

Lovins, Amory (1976) "Energy Strategy: The Road Not Taken", *Foreign Affairs*, **55(1):** 65–96.

Leach, Gerald, (1992) "The Energy Transition," *Energy Policy*. 20(2):116-123.

Gibbs, W. Wayt, (2006), "Plan B for Energy", Scientific American, Sept., pp. 102-114.

American Physical Society Review and Recommendations for Energy Efficiency (2008) *Think Efficiency.* http://www.aps.org/energyefficiencyreport/

US DoE Office of Energy Efficiency & Renewable Energy; http://www.eere.energy.gov

Wirth, T. E., Gray, C. B., and Podesta, J. D. (2003) "The future of energy policy", *Foreign Affairs*, 82(4): 132–155.

Hydrocarbon Energy

Friedman, Thomas L. (2006) "The First Law of Petropolitics", *Foreign Policy*, **154:** (28 – 36).

Campbell, Colin J., and Laherrere, Jean H. (1998) "The End of Cheap Oil", Scientific American, March. **278**(3)78–83

Nef, John U. (1977) "An early energy crisis and its consequences", *Scientific American*, November, pages 140 – 151.

Farrell, Alex E., and Brandt, Adam R. (2006) "Risks of the oil transition," *Environmental Research Letters,* **1**, October 30.

Beér, J. M. (2000) "Combustion technology developments in power generation in response to environmental challenges", *Progress in Energy and Combustion Science*, **26**, 301 – 327.

Bailis, Ezzati, Kammen, (2005) "Mortality and Greenhouse Gas Impacts of Biomass and Petroleum Energy Futures in Africa" *Science*, 308 (5718): p. 98-103.

Farrell A. E., Plevin, R. J. Turner, B. T., Jones, A. D. O'Hare, M. and Kammen, D. M. (2006) "Ethanol can contribute to energy and environmental goals," Science, **311**, 506 – 508.

O'Rourke, D. and Connolly, S. (2003) "Just oil? The distribution of environmental and social impacts of oil production and consumption," *Annual Reviews of Environment and Resources*, 28, 587-617.

Fuels Cells

Masters, G. (2004) "Fuel Cells," in Renewable and Efficient Power Systems (Wiley InterScience: New York), pages 206-228.

Keith, D. W. and Farrell, A. E. (2003) "Rethinking hydrogen cars", *Science*, **301**, 315 – 316.

Romm, J. (2004). Hype about Hydrogen. Washington, D.C.: Island Press. Chapters 1, 4, & 8.

Ogden, J. (2006). "High Hopes for Hydrogen", *Scientific American,* September, pp. 94-101.

Turner, John A. (2004), "Sustainable Hydrogen Production", *Science*, 305, pp. 972-974.

Demirdoven, N. and Deutsch, J. (2004) "Hybrid cars now, fuel cell cars later", *Science*, **305**, 974 - 976.

Solar

Masters, G. (2004) "Photovoltaic Materials and Electrical Characteristics." Renewable and Efficient Power Systems (Wiley InterScience: New York), pages 445 – 463.

Nemet, Gregory F. (2006) "Beyond the learning curve: factors influencing cost reductions in photovoltaics." *Energy Policy.* 34 (2006) 3218–3232.

Wadia, C., Alivisatos, P. and Kammen, D. M. (2009) "Materials Availability Expands the Opportunity for Large-Scale Photovoltaics Deployment", *Environmental Science & Technology*, 43, (6), 2072 - 2077.

Hydroelectric

World Commission on Dams (2000). "Executive Summary," in *Dams and Development: A New Framework for Decision-Making*, World Commission on Dams: South Africa. http://www.dams.org

Paish, Oliver (2002) "Micro-hydropower: status and prospects," *Journal of Power and Energy,* 216(1): 31–40.

Wind

Masters, G. (2004) “Wind Power Systems.” Renewable and Efficient Power Systems (Wiley InterScience: New York), pages 307 – 354 (pages 335-347 are supplemental), 371 – 378.

Nuclear

Excellent online material on reactor types and performance is available at http://www.nrc.gov/reactors/power.html

Flynn, J. et al. (1997) “Overcoming Tunnel Vision: Redirecting the U.S. High-Level Nuclear waste program”, *Environment*, **39** (3): 6–11, 25–30.

Hultman, N., Koomey, J. G, and Kammen, D. M. (2007) “What history can tell us about the costs of future nuclear power”, *Environmental Science & Technology,* 41(7): 2088-2093.

Lake, J. A., Bennett, R. and Kotek, J. F. (2002) “Next Generation Nuclear Power”, *Scientific American*, Issue 1, 73–81.

Peterson, P., W. Kastenberg, and M. Corradini. (2006). “Nuclear Waste and the Distant Future.” *Issues in Science and Technology*. Summer: pp. 47-50.

Sailor, W. C., Bodansky, D., Braun, C. Fetter, S. and van der Zwaan, R. (2000) “A nuclear solution to climate change”, *Science*, **288**(5469): 1177–1178.

Electricity

Kammen and Pacca (2004) “Assessing the Costs of Electricity” *Annual Review of Environment and Resources*, 29 (1): p. 301-344 (2004).

Masters, G. (2004) “Transmission and Distribution,” in Renewable and Efficient Power Systems (Wiley InterScience: New York), pages 145 – 151.

Fairley, P. (2004) “The unruly power grid”, *IEEE Spectrum*, 13 August, 5 pages.

Climate Change

Copenhagen Climate Change Synthesis Report: http://climatecongress.ku.dk/

Collins, William, et al. (2007) “The Physical Science Behind Climate Change.” *Scientific American.* August, 297, pp 64–71.

Pacala, S., and Socolow, R. (2004) “Stabilization wedges: solving the climate problem for the next fifty years with current technologies”, *Science*, **305**, 968 – 971.

Baer, P., et al. (2000). “Equity and Greenhouse Gas Responsibility.” *Science* **289**(5488): 2287.

LINC101: First Year Writing Seminar

Date		Scheduled Topic	Readings		
			A Sequence for Academic Writing	*Energy*	*Articles*
Monday	8/31	Course Introduction Introductory Writing Activity	Chapter 1, pp. 3-23 (prep for exercise 1.1) Preview Chapter 7 (prep for library visit)		
Wednesday	9/2	Library Research (Fossil Fuels) HW: Library search exercise	Chapter 1, pp. 24-33		Gibbs Wirth
Friday	9/4	Student Services: Sex Signals	Chapter 1, pp. 33-36 (prep for exercise 1.6)		
Monday	9/7	Summary Activity - Exercise 1.1 GHW: Exercise 1.2			
Wednesday	9/9	Paraphrasing Activity (start exercise 1.6)			
Friday	9/11	Student Services: Counseling Center, Health Center and Religious Life			
Monday	9/14	"Trim the Fat" exercise Bio-poems activity			
Wednesday	9/16	The Rules of Discussions	Chapter 1, pp. 36-46 (prep for exercise 1.8)		
Friday	9/18	Student Services: Academic Support Center			
Monday	9/21	Discussion of Gibbs, Wirth articles	Chapter 1, pp. 46-47	Chapter 4	Friedman Campbell Nef
Wednesday	9/23	PB&J activity Quotations Activity (exercise 1.7 in class) HW: Exercise 1.8			
Friday	9/25	Student Services: Career Development Center			
Monday	9/28	Fossil Fuels Discussion			
Wednesday	9/30	Visit to the Writing Center			
Friday	10/2	Student Services: Student Involvement & Leadership			
Monday	10/5	Library Research (Fuel Cells) HW: Library search exercise			
Wednesday	10/7	Discussion of Friedman, Campbell, and Nef articles	Chapter 2, Critical Reading and Critique	Chapter 5	Turner Keith

				Ogden
Friday	10/9	Student Services: Center for Intercultural Advancement & Global Inclusion		
Monday	10/12	No Classes		
Wednesday	10/14	Plagiarism Discussion		
Friday	10/16	Finish Plagiarism Discussion		
Monday	10/19	Fuel Cell Demo and Fuel Cell discussion		
Wednesday	10/21	Dean Skalnik presentation on liberal arts		
Friday	10/23	Got Faculty Critiques		
Monday	10/26	Critique Activity (Exercise 2.5)		
Wednesday	10/28	Library Research (Solar) HW: Library Search exercise		
Friday	10/30	Discussion of Turner, Ogden, and Keith articles HW: Critique of Keith article		
Monday	11/2	Keith Critique	Chapter 3, Explanatory Synthesis	Nemet
Wednesday	11/4	Peer Review paper workshop		
Friday	11/6	Peer Review		
Monday	11/9	Ashley Forsythe talk		
Wednesday	11/11	Synthesis activity (ex 3.1)		Aravind
Friday	11/13	Library Research (Green) HW: Library Search exercise		
Monday	11/16	Synthesis (3.2 in class, 3.3)		
Wednesday	11/18	Review Nemet article Argument synthesis activity	Chapter 4, Argument Synthesis	
Friday	11/20	Alternative energy discussion		
Monday	11/23	Library Research (Nuclear) HW: Library Search exercise		PA-DEP report
		Thanksgiving Break		
Monday	11/30	Nuclear Energy discussion		
Wednesday	12/2	Poster workshop		
Friday	12/4	Presentation workshop		
Monday	12/7	Final presentations		
Wednesday	12/9	Final Presentations		

Friday 12/11 Final Presentations