

**FYS 188Z**  
**Medical Ecology**  
**Spring 2007**

**A. Instructor and Staff Information**

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<b>Jeff McCartney, Mentor</b> Phone: 315-794-0338 E-Mail: <a href="mailto:jrmcca03@stlawu.edu">jrmcca03@stlawu.edu</a>	Senior, Biochemistry Major, Physician Assistant interest Townhouse 403 Office hours: T Th 6-11; M Th 3-6 Launders
<b>Mukhaye Michimuti, Mentor</b> Phone: x6561, 315-854-4428 (cell) E-Mail: <a href="mailto:mmmuch04@stlawu.edu">mmmuch04@stlawu.edu</a>	Junior, Neuroscience major with a Pre-health interest Dean Eaton 1068 Thursday class time, Th 3-6 and by appointment

**B. Course Description**

Everything is connected to everything else. In this course, you will explore the connections between changing environments and the distribution of disease organisms over time as well as the co-evolution of disease organisms with their human host. To understand the issues, we will use several primary examples of environmental and evolutionary changes with profound medical impacts. These include severe inbreeding depression in Florida panthers as a function of habitat isolation, the evolutionary success story of the 4 species responsible for malaria; why a vaccine for HIV is an unlikely event in the near future; the resurgence of tuberculosis; and what we can learn about bird flu from the influenza pandemic of 1918. You will also learn several simple bioinformatics techniques to determine if DNA samples from simulated patients contain normally occurring or pathogenic organisms, and how scientists study toxic chemicals using gas chromatography, flow cytometry, and microarrays. **Students who take this FYS must also co-enroll in at least one Natural Science distribution lab science.**

**Class day and times: Tuesday/Thursday 10:10-11:40 Launders 211**  
**Wednesday 1:40-3:10 Launders 211**

**Course Goals**

There are five major objectives in this course:

- a. To learn the elements, standards and intellectual traits of critical thinkers,
- b. To read and understand different levels of literature (from primary to tertiary) that set the historical stage for your individual research projects;
- c. To collaborate, cooperate, research, write, and present issues of medical ecology based on intellectual traits as described by Paul and Elder.
- d. To utilize scientific method to augment your understanding of the issues discussed.
- e. To learn about issues that challenge your current understandings and develop personal responses to overcome obstacles in your interactions with people of all cultures.

Close reading, grammatically and compositionally correct writing, confidence in public speaking, consideration of what makes a good critical thinker and increased cultural competence are all “tools” of incalculable intellectual worth. The intent of learning these “tools” in this format is to orient your thinking in a way that prepares you to ask questions outside of regular course content and personal

experience. Most importantly, our course will provide you with additional "tools" to navigate your life journey with peoples from all cultures.

### **Skills Goals**

Research, speaking, writing, and interpersonal interactions are related activities. You will:

- a. Use library resources to search collections, databases and on-line sources to develop an in-depth and critical understanding of assignment questions,
- b. Work with peers, mentors, faculty, and university staff in a professional manner to conduct this work,
- c. Demonstrate your understanding through a sequence of oral presentations and individual draft papers,
- d. Submit your assembled work in your personal end-of-semester portfolio in which you will describe your personal growth in all goals using your assembled work as evidence.

**Required Texts:** (listed in CBE Style). They are available for purchase at Brewer Bookstore or amazon.com:

Davis JP. 2004. The Rowman and Littlefield guide to writing with sources. 2nd ed. New York: Rowman and Littlefield Publishers, Inc.

Hacker D. 2004. A pocket style manual. 4th ed. Boston: Bedford/St. Martin's. 250 p.

Kidder T. 2003. Mountains beyond mountains. New York: Random House. 322p.

National Research Council, editor. 2001. Under the weather: Climate, ecosystems, and infectious disease. Washington, D.C.: National Academy Press. 146 p.

O'Brien SJ. 2003. Tears of the cheetah: The genetic secrets of our animal ancestors. New York: St. Martin's Griffin. 287 p.

Paul, Richard. and Linda Elder. 2003. A miniature guide to critical thinking: Concepts and tools. First ed. California: The Foundation of Critical Thinking. 47 p.

Shilts, Randy. 1988. And the Band Played On. New York: St. Martin's Press. 615 p.

Walters, M.J. 2003. Six modern plagues and how we are causing them. Washington: Island Press. 212 p.

**You must also have access to a college-level dictionary and thesaurus.**

We will post **Additional readings and resources** to the Lauanders Science Library homepage ([sciencelibrary.stlawu.edu](http://sciencelibrary.stlawu.edu)) in lieu of a course packet. Log into the network using your SLU network ID and password, and go to Biology, Class = FYS 188Z Medical Ecology; click on the citation being sought and follow the instructions. Additional resources are available on the Angel course page.

## **C. Course Structure**

**The Plenary Session** for FYP 188Z will meet T Th 10:10-11:40 in Lauanders 211.

Rules for plenary:

- a. Attendance = you show up ready to work, notebook open, pen in hand, attentive and not bleary-eyed. I consider you a professional academic.

- b. Preparation = you have done the assigned readings/assignment, written your outlines/notes/reflections utilizing the elements and standards of critical thinking, and have thought about how you will share those ideas, questions, and reflections with the plenary group. You will keep organized records of these outlines/notes/reflections as evidence of your progress in critical thinking for inclusion in your portfolio, an end of semester, evidence-based document handed in for credit (see Major Assignments, Portfolio, below).
- c. Participation = active engagement in the activities of the plenary session. These activities will be varied and depend on the particular readings assigned.

**The Seminar Session** for FYP 188Z will meet on W 1:40-3:10 in Launderers 211.

Rules for seminar = read rules for plenary and replace plenary with seminar.

The seminar will parallel the plenary but will be explicitly devoted to teaching the research skills necessary for writing college level papers using mostly primary literature as resources to document breadth and depth. The seminar will allow you time to work on your research assignment.

## D. Major Assignments

1. **Portfolio** = end of semester document either hard text (collected in a three ring notebook) or digital (example ePortfolio).

Your portfolio contains two essential sections; the narrative and the evidence.

- a. The narrative is a written paper that examines your progress in developing the eight essential intellectual traits of a critical thinker (humility vs. arrogance, courage vs. cowardice, empathy vs. close-mindedness, autonomy vs. conformity, integrity vs. hypocrisy, perseverance vs. laziness, reason vs. distrust of reason and evidence and fair-mindedness vs. unfairness) based on the elements and standards of critical thinking..
- b. The evidence is a collection of all your work done in this course over the semester usually placed as appendices at the end and in support of the narrative. You could present your evidence 1) chronologically, 2) by assignment types (ex. *Unit 1*: critical reflections on readings, research papers used vs. not used, paper development, oral presentation development, *Unit 2*: etc), or 3) by assignment type over the whole semester (example, technical and compositional improvements in your writing *over the course of the semester*, development of oral and written peer evaluations *over the course of the semester*, refinement of research note taking *over the course of the semester*, evolution of your close reading and critical reflections on readings *over the course of the semester*, etc.). It is your choice. Make your choice and the structure of your portfolio explicit in both the narrative and evidence sections.

2. **Term Project (abstract, outline, annotated bibliography, 2 drafts, 2 orals, poster and final paper)**

The focus of the course is a final, 10-page, double-spaced paper. The paper will be the result of your research on a thesis you develop. There are specific stages to the writing of a major research paper and we will work out the details of this process during the semester. Peers, mentors and instructors will review drafts of the stages for you to use to improve your final products. An absolutely integral aspect of writing well is getting feedback, feedback, feedback. Having done a thorough research analysis, you will be the resident expert on the specific question you researched. Peers will ask you, the resident expert, to make a formal presentation and impromptu remarks based on your understanding of your topic throughout the semester. **Students will write their own papers.**

3. **Oral Presentations (2-3 oral presentations)**

As the resident expert, you will share the basic science, cultural constructs, ethics, health policy including infrastructure and surveillance, and any other aspects related to your thesis during

plenary and/or seminar time in an individual formal presentation. In addition, you will be responsible for 1-2 class readings and provide background, clarification, and context for the reading. You may construct a Powerpoint for this presentation. Again, performance of an oral presentation takes practice. We will assign tasks in a stepped manner to increase your confidence and competence as the semester proceeds. You will submit your finished paper and a poster of your thesis presentation and the Powerpoint(s) for your reading(s) presentation just prior to your delivery.

## E. Course Policies

**Courtesy, Communication and Concern for Others** These are attributes that you learned in elementary school. They apply here. A useful model for these behaviors is PEGS. P = positive regard for every person's worth, E = empathy (not sympathy), G = genuineness, and S = specificity concerning others' behaviors. It is always about behaviors, not judgment about a person's worth.

**Attendance** is mandatory because we rely on your expertise as a participant. There are, however, times when you will be unprepared. Perhaps you just had two exams the same day or, for unfortunate circumstances, you are ill. Out of courtesy, communicate your circumstances to us so that we can manage the daily exercise and not appear absolute fools. Our assumption is that you are an adult. If you arrive late, we expect your entrance into class to be discreet, with an attempt not to disturb the flow of activity. You are responsible for joining the group and getting yourself up to speed. It is appropriate to discuss the reason for the lateness with a faculty person prior to leaving the classroom. This is part of communication.

### **Late Policy**

- a. Due dates are hard deadlines.
- b. You are responsible for punctuality, completeness and integrity of all work done.
- c. We reserve the right to refuse late work.
- d. If we do accept late work, we will deduct one whole grade point. For example, a 3.0 paper will receive a 2.0.

**Academic Misconduct** You have signed a pledge of academic honesty. Our assumption is that materials submitted by you are records of your voice. Please do not change this assumption. Again, our assumption is that you are an adult. The University Honor Council will address violations.

## F. Grades

### **Contribution of Assignments to Final Grade**

Portfolio	20%
Term Project	50%
Oral Presentations (2-3)	10%
Course Grade	20%
Total	100%

### **University Grading Scale**

The University assigns grades based on a 4.0, 3.75, 3.5, 3.25, 3.0, 2.75 etc. scale. There are no curves.

Course grade = attendance, preparation, quality of class preparation, quizzes.

## First-Year Program Philosophy and Goals 2006-07

The First-Year Program (FYP) and First-Year Seminar (FYS) are the first steps in a four-year process of helping you meet the University's Aims and Objectives and the broader goals of a liberal education. The faculty of the FYP and FYS see themselves as partners and mentors in the process of working with you to acquire the intellectual habits of mind, the writing, speaking, and research skills, and the ethical self-reflexiveness that are at the core of a liberal education. The FYP and FYS will ask you to consider new perspectives on the world and your place in it and will challenge you to confront many of the hidden assumptions you bring to college with you. We hope to open you to new ideas, help you to see the complexity of the way in which knowledge gets produced and used in society, and encourage you to see yourself as an active contributor in making the world a better place. The course topics, the texts you will read, listen to, and watch, the in-class and out-of-class activities you will engage in, and the writing, speaking, and research assignments you will work on are all designed to introduce you to the depth of critical thinking and the quality and complexity of the communication skills that will be expected of you at SLU and as a citizen of an increasingly diverse society.

First and foremost among our goals are those related to your abilities as a communicator. The work of the FYP and FYS asks you to design and deliver written, spoken, performed and/or visual texts that demonstrate basic skills in the relevant modes of communication and with an increasing degree of rhetorical sensitivity. Our focus on "rhetorical sensitivity" means that we expect you to cultivate the awareness that all of your communication, whether formal or informal, involves having to make choices about your messages, whether written, spoken, aural or visual. To become a good communicator, you need to recognize that the creation of meaningful and powerful written, spoken, performed, or visual texts involves both a creator and an audience, and that therefore the voice you adopt in your communication, the audience you imagine yourself communicating to, and the social and ethical context of the content, matter a great deal in creating such texts. One important way to become a better communicator is to become a better critical reader, viewer, and listener, which is why we will ask you to engage challenging materials in a variety of forms and work with you to learn how to interpret them.

Learning to read, listen, write, speak, do research and/or perform well also requires feedback. As faculty, we submit our work for feedback from colleagues all the time, and giving and receiving constructive feedback from both friends and strangers is central to collaborative work in any field and is itself a form of critical thinking and learning. We further recognize that this feedback process is not linear and that good communication requires that you continually rethink, restructure, and revise your work in order for it to be your best. This is why we require that your writing, speaking, and performance assignments be "projects" that include preparatory exercises and multiple drafts or rehearsals, all of which ask you to continue to reflect critically on the choices you have made in the texts that you produce. Furthermore, we see all of these forms of communication as complementary and intertwined, which is why many of your assignments will ask you to integrate elements of the written, spoken, performed, and visual. Finally, developing good habits of critical inquiry and communication also means reflecting on the ethical dimensions of how your work represents that of others, thus one of our goals is to help you to understand both the nature of academic integrity and the social processes by which knowledge is produced and represented.

To ensure that the program is meeting its stated goals, all FYP and FYS syllabi are read by other faculty in the program to determine if they include a variety of assignments that foster the writing, speaking, research, and critical thinking goals of the program. All FYP and FYS courses have to be approved by faculty in the program before they are offered.

Week	Date	Topic	Readings/Video/Internet Source/ Play
1	1/23	<a href="#">Medical Ecology</a> - What is it? Case Study: Haiti; Choosing presentation topics	Paul and Elder; Kidder, <i>Mountains Beyond Mountains</i> ;
	1/24	Formulating a Question; Sources and How to Find and Organize Them	Hacker, Davis; <a href="#">RefWorks Quick Start Guide</a>
	1/25	Climate and Infectious Disease	National Research Council (NRC) Ch 1-2
2	1/30	Linkages Between Climate and Specific Diseases	NRC Ch 3-4; <a href="#">Catastrophe</a> (DVD)
	1/31	Choosing Sources, Style Manuals	
	2/1	Quiz 1; Studying Climate/Disease Linkages	NRC Ch 5-6; <a href="#">GCMS, Microarray, and Flow Cytometry to Monitor the Environment</a>
3	2/6	Epidemic Early Warning Systems	NRC Ch 7-8; <a href="#">Guns, Germs, and Steel Part 3(DVD)</a>
	2/7	From Reading Sources to Construction of an Outline	
	2/8	Quiz 2; <b>Human Medical Ecology: Surveillance and Infrastructure</b> ; Mad Cow Disease	Walters Ch 1; Use <a href="#">RX for Survival: A Global Health Challenge</a> (DVD); <a href="#">The Immune System</a>
4	2/13	HIV/AIDS	Walters Ch 2; O'Brien Ch 12-13
	2/14	Preliminary thesis and Outline due; Constructing an Annotated Bibliography	SLU: Vagina Monologues
	2/15	Quiz 3; <i>Salmonella</i> DT104	Walters Ch 3
5	2/20	CSQ; Lyme Disease	Walter Ch 4
	2/21	<b>Thesis and Annotated Bibliography Due</b>	Syracuse Stage: Gem of the Ocean: 21 Feb- 11 March (Exploitation)
	2/22	Quiz 4; Hantavirus	Walter Ch 5
6	2/27	West Nile	Walter Ch 6
	2/28	<b>Thesis and Annotated Outline Due</b> ; 3-5 minute Oral	
	3/1	Quiz 5; <b>Animal Medical Ecology</b> : A Mouse that Roared	O'Brien Ch 1
7	3/6	Tears of the Cheetah	O'Brien Ch 2
	3/7	<b>First Draft Due</b> ; Peer Evaluation of Draft	
	3/8	Quiz 6; Prides and Prejudice	Shilts, <i>And the Band Played On</i> ; O'Brien Ch 3
8	3/13	A Run for Its Life: The Florida Panther	O'Brien Ch 4,5
	3/14	<b>Second Draft Due</b> ; Reading/Writing Workshop 3	
	3/15	Quiz 7; A Whale of a Tale	O'Brien Ch 6
9	3/17-25	Spring Break	
10	3/27	The Lion Plague	O'Brien Ch 7
	3/28	How to construct a Poster	
	3/29	Tipping Points	<a href="#">Whitty. 2006.p1-9</a> , <a href="#">An Inconvenient Truth</a> (DVD)
11	4/3	<b>Final Draft Due</b>	
	4/4	Bioinformatics Workshop	Syracuse Stage: Death of a Salesman: 4 April-6 May: (the American Dream?)
	4/5	Quiz 8; The Human Genome Project	O'Brien Ch 10-11
12	4/10-12	Poster Construction	
13	4/17-19	Oral Poster Presentations	
14	4/24-26	Poster Draft Due; Initial Oral Report 4/26	Guest: <a href="#">Dr. Richard Pelman, U. Washington, Bellvue Urology Associates</a>
15	5/1-3	Group Presentations; Final 10-page Paper Due	

Find additional materials on [Angel](#) and [SLU Science Library/Biology/Medical Ecology](#). The contents of this syllabus are subject to change in the event of extenuating circumstances and at the discretion of the instructor.