

Evolution, Medicine and Evidence – IFS 2105 David Houle

Syllabus

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This syllabus lays out the basic procedures and policies that I will use to run this course. You should read all of the materials here and on the rest of the Blackboard site. I will assume that all of you are familiar with these materials.

Click on the following links to jump straight to the following key topics:

First Day Attendance In-class Meetings Delivery of Course Material Your Grade in This Course Missing a Due Date or Quiz Plagiarism and Honor Code Violations

Course Description

The practice of science has transformed the physical and intellectual worlds we live in. Many believe that our understanding of evolution should further transform our world. We will consider these possibilities in the context of medicine, the place where science has the biggest potential to affect our own lives. In this course, students will investigate three overlapping sets of issues:

- 1. What is scientific evidence, and how is evidence used to come to conclusions about the world?
- 2. What is the scientific evidence concerning biological evolution, and what conclusions may be drawn from it?
- 3. What are the implications of evolutionary thinking for the practice of medicine?

Each of these issues are particularly important to consider now, as one can readily find those who believe

- 1. Scientific knowledge is not superior to other kinds of knowledge.
- 2. Biological evolution did not happen.

3. Evolutionary thinking is not relevant to medicine.

By the end of the course students should be able to take an informed stance on these claims.

This course is part of the *Liberal Studies for the 21st Century* program at Florida State. This course and others in this program are designed to help students become life-long learners, interdisciplinary and flexible thinkers, and productive members of teams. This course has been approved for the Liberal Studies disciplinary requirement for Natural Science and specifically promotes your ability to be a critical appraiser of theories and the facts that support them.

Course Objectives

To do well in this course students will demonstrate that they are able to:

- 1. Identify, access, and understand the less technical aspects of scientific literature.
- 2. Disentangle arguments into a series of component assertions, and determine the degree to which an assertion is both logical and supported by scientific evidence.
- 3. Articulate the major kinds of evidence in favor of biological evolution.
- 4. Explain the current theory of evolution, and identify which parts of the theory of evolution are well-supported, and those that are more likely to change.
- 5. Be able to apply the theory of evolution to come up with a hypothesis about the origin or cause of a biomedical phenomenon, such as cancer, or addiction.
- 6. Make a prediction about how best to alleviate or treat a medical condition based on an evolutionary hypothesis.
- 7. Apply all the above skills to write a paper investigating the evidence for and against an argument relevant to the practice of medicine.

Prerequisites

This course is open to all FSU students who have a desire to learn about the topic, have a good internet connection and are willing to do the required work.

Fulfillment of the writing requirement

This class is intended to fulfill the college-level writing competency required by the State of Florida. To fulfill this requirement, the student must earn a "C" or higher in the course, and earn at least a C average on the required writing assignments. If the student does not earn a C average or better on the required writing assignments, the student will not earn an overall grade of C or better in the course, no matter how well the student performs in the remaining portion of the course.

Delivery

This course will be delivered primarily online, through the Blackboard system (<u>https://campus.fsu.edu</u>) at Florida State University. Each week by Monday at midnight you should view the videos assigned that week, complete the assigned readings, and take the quiz about that material. Every other week each student will attend an in-

person meeting. Students in Sections 1 and 3, will attend sessions one week, while students is Section 2 will attend in the other week. In addition, students will have a short writing assignment to complete almost every week.

A critical requirement for this class is access to a reliable Internet connection. It is also a requirement of any online course at FSU that you use your official FSU email account (yourname@my.fsu.edu email address) to receive messages from the instructor and mentors in the class or to access Blackboard. You may have the email from this account forwarded to another address. See the FAQ section of the Blackboard site for <u>instructions</u>.

Blackboard should work on all internet browsers but we develop the course using Google Chrome, and it may be best viewed with this browser. You must allow your browser to accept cookies.

You should keep in mind that Blackboard is an online software platform which could be a subject of high-volume traffic, slow-downs, glitches, and relative software instability depending on your internet browser or computer. We will take into account any general problems that Blackboard may be having, but last-minute technical difficulties are otherwise not an acceptable excuse for late work. We describe solutions to some common problems on the FAQ section of the web site. If those suggestions do not help contact Blackboard Support. If you can get online, log on Bb, click the Support tab on the top right corner of the screen and follow the instructions. If you can't get online at all, call 850-644-8004. Note that Blackboard staff are generally only on duty between 8AM and 5PM.

First Day Attendance

You must come to the first face-to-face meeting of the class on at 12:30 PM, Tuesday, Aug. 29th in Bio Unit I room 307 or I will assume that you have made other plans, and drop you from the class. If there is still room after this, you can re-register for the class, but there is no guaranty that there will be room.

Sections and bi-weekly in-person class meetings

There are three sections in this class. Your section will determine when you come to inclass meetings, and when some of your assignments are due. Sections 1 and 3 are grouped in the ODD section, and will meet together on alternate Tuesdays, starting on Sept. 5th. Section 2 is the EVEN section, and will meet on alternate Tuesdays, starting on Sept. 12th. These meetings will be used to facilitate collaborative assignments and discuss class material. Both sections of the class will meet in Bio Unit I, Room 307.

Interacting with the Instructor and Mentor

See the Contact Information link on the Blackboard site for information on how to contact us. This is an online course, so you have access to the material 24/7. We will not be online all that time. We will be available 6 days a week (we get Saturdays off) via email and we will do our best to answer your emails within 24 hours. Before sending us an email, please check the FAQ link on the course main menu on Bb to see if the

answer is already there. In addition, we will both have office hours listed in Contact Information for in person consultations.

You are welcome to approach either Ethan Cissel or Dr. Houle for questions about course material, or to get extra help. Consult first with mentor Ethan Cissel for clarification on assignments, quizzes, grade feedback, deadline extensions, etc. You may email Dr. Houle to discuss overall grade concerns, overall course logistics and matters that do not get resolved to your satisfaction from working with Ethan. Please include the full email chain for all such exchanges, so that I can see what you have already discussed with Ethan.

For Blackboard IT problems, use Blackboard support (see above).

Reading

Required texts:

- 1. Coyne, Jerry A. 2009. *Why Evolution is True*. Viking Press: New York. Available in print, Kindle, and on Google as an ebook. ISBN 978-0670020539
- Stearns, S. C., and R. Medzhitov. 2016. Evolutionary Medicine. Sinauer, Sunderland, MA. Available in print, for rental and as an e-book (www.sinauer.com/ebooks). ISBN 978-1605352602

Both are available from on-line sources, such as Amazon.

The approximate schedule of readings I expect you to complete is available as a separate document in the Syllabus and Schedule section of the web site. This schedule may be altered as the course proceeds.

Course work

Your course grade will be based on the following assignments:

- Video lectures and assigned readings. These contain all the key information that you need to do well in this class. Look under the <u>Course Materials</u> section of the course web site for the materials for each week. This information is replicated in the <u>This</u> <u>Week</u> link for the current week.
- II. Regular online quizzes. These are due by 11:59PM each Monday starting Sept. 4.
- III. Preparation for and participation in in-class sessions every other Tuesday. There will sometimes be an individual assignment to help you prepare for these sessions.
- IV. Two major writing assignments. The first is a group assignment researching the evidence relevant to a public claim about evolution that you will complete with other members of your course section. The second is an individual paper in which you research and explain the evidence relevant to the evolutionary background to a medical problem. These two assignments will each be completed in small steps:
 - A. A topic statement: a 500 word version that includes your topic, a preliminary hypothesis and cites primary scientific references that bear on your topic.
 - B. After you receive comments on the topic statement, you will write an essay of at least 2000 words that uses the scientific literature to investigate your topic,

and explains the error at a level suitable for an intelligent layman to understand.

- C. You will revise and improve the paper, taking into account all the feedback you receive.
- V. Peer evaluations. During both writing assignments, you will be asked to critique the work of others, and receive a grade based on the attention you give to your critiques.

For additional information on these assignments, consult the <u>Assignment page</u> on the web site.

Your Grade in This Course

Your overall grade in the course will be determined by the cumulative percentage scores on quizzes, participation, assignments and papers. These will be weighted as follows:

Туре	Element	Weight	
Quizzes:	Quizzes	1%	
	Quiz total		14%
Participation:	Attendance and participation in		6%
	section, group discussions		
Group	Evol. Claim topic statement	3%	
assignments	Finished Evol. Claim paper	6%	
	Revised Evol. Claim paper	9%	
	Group projects		18%
Individual	Read a paper	2%	
tasks:	Search and Skim	2%	
	Evol. Claim topic ideas for groups	2%	
	Three paragraph project section	5%	
	Calibration Reviews	2%	
	Peer-, self-review of Group projects	4%	
	Effort Rating of peers in group	1%	
	Glossary Wiki contributions	4%	
	Peer review of Evolutionary Medicine	3%	
	papers		
	Individual task total:		25%
Evolutionary	Topic statement	6%	
Medicine Paper:	Completed paper	10%	
	Calibration, Peer, Self-review	6%	
	Revised final paper	15%	
	Paper total:		37%

Details on the grading of particular assignments will be posted on the Assignments page on the web site.

If everyone does well in the course, I will not grade on a curve, and will use the following percentage targets:

A- 88% or above

B- 78%

C- 68%

D- 58%

It is likely that the work required in this course prove challenging to the majority of students, and then we assign final grades based on a curve, that is to judge your performance relative to that of other students in the class. The overall average final grade will be at least a C+. I will assign at least 10% A's (that is A or A-), and hope that the rest will fall in the B and C range. Grades less than C will, however, be assigned if you earn them, so don't give us reason to do this!

If you all earn a grade of 88% or more, you will all receive some sort of A grade. However, if no one gets an 88%, the top 10% of you will still earn an A grade.

There is one other complication. To demonstrate college-level writing competency as required by the State of Florida, the student must earn a "C" (2.0) or higher in the course, and earn at least a C average on the required writing assignments. If the student does not earn a C average or better on the required writing assignments, the student will not earn an overall grade of C or better in the course, no matter how well the student performs in the remaining portion of the course.

Questions about your grades

Please email us when you want to know why your answers were graded in a certain way. This is a great way to clarify misconceptions you may have. It is important to get these questions answered, as material recurs throughout the course. Some assignments will be graded by just one of us, and the grader is the first person to contact with questions.

We do sometimes make mistakes in grading, or entering those grades, and we are happy to correct errors when they are brought to our attention. If, after asking your questions, and an initial discussion, you are still convinced that there is a grading error, you can ask Dr. Houle for a formal regrade using the following process:

Regrading: You are free to ask for a re-evaluation of any part of any assignment, quiz or paper, subject to the following conditions. First, your request must be made to me no later than one week after your grade is made available to you. Second, your request must be in the form of a written justification of 500 words or less why you believe your contribution was graded incorrectly. For individual assignments, this justification must compare your answer to the full-credit answers that will be posted (which will have been written by one of your colleagues in the class - no names will be revealed of course). Fourth, all re-grading decisions are final.

Working together - sometimes

Students learn a lot from each other by sharing their knowledge, correcting each other's misconceptions, quizzing each other while studying, etc. You will work together on group assignments, and I encourage to continue to work together informally on the course material. However, any assignment designated as individual must be composed by you alone. Note that I REALLY mean this about composing your own individual work. We will use the TurnItIn site for submission of papers. For other assignments and

quizzes, we will be on the lookout for work that is too similar. Simply copying someone else's answer is plagiarism! See the section about plagiarism below if you are not sure what I mean.

Keeping up with the course

An online course offers you flexible opportunities to work "on your own schedule." You can do the reading, the studying, and the assignments at times convenient to you as long as you do them by the posted deadlines. This flexibility, however, could also be treacherous because it is easy to postpone doing the work so long that you cannot take the time required to do it well, or cannot complete it by the deadline at all.

Don't fail to take quizzes or hand in work on time! You will receive a grade of 0 for assignments and quizzes where you miss the posted deadline.

unless . . . one of the following conditions is met:

Known conflicts. If you have a conflict with the date of a scheduled course deadline due to some important event (e.g. a religious holiday, medical school interview), let me know at least one week in advance of the date. I will arrange an alternative deadline. No quizzes will be available in advance of the scheduled date and time. If you do not arrange for such conflicts in advance, you will still receive a grade of 0.

Emergencies: If you miss a course deadline due to illness or other emergency you must furnish documentation to verify the illness, accident, death, etc. Once you present that material to the Mentor or I, we will arrange an alternative date by which the work must be completed. Such extension will not be given unless you convince us that the circumstances were truly unavoidable.

Honor Code

I expect you to be familiar with and adhere to the University's academic honor code. Any claim of ignorance of the honor code is unacceptable. The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthful and...[to] strive for personal and institutional integrity at Florida State University." The Honor Code is available at http://fda.fsu.edu/Academics/Academic-Honor-Policy.

Plagiarism

The vast majority of Honor Code violations that I deal with are plagiarism. Please note the following description of plagiarism from the FSU Academic Honor Code:

"PLAGIARISM. Presenting the work of another as one's own (i.e., without proper acknowledgement of the source). Typical Examples Include: Using another's work from print, web, or other sources without acknowledging the source; quoting from a source without citation; using facts, figures, graphs, charts or information without acknowledgement of the source; utilizing ghostwriting or pay-for-paper services."

Honor Code Violations

Violations of the Honor code **will be penalized severely**, including the possibility of receiving a failing grade in the course. I do report all violations of the Honor Policy to the Dean of Faculties – I am required to do so. If you are found to have committed such a violation, it will become part of your academic record.

Students with disabilities

Students with disabilities needing academic accommodations should first of all let me know of your limitation, and suggest ways that we can help you surmount them. Formally, for the University procedure, you should:

- Register with and provide documentation to the Student Disability Resource Center (SDRC).
- Send a letter to the instructor from the SDRC indicating you need academic accommodations. This should be done within the first week of class.

For more information about services available to FSU students with disabilities, contact the

Student Disability Resource Center 874 Traditions Way 108 Student Services Building Florida State University Tallahassee, FL 32306-4167 (850) 644-9566 (voice) (850) 644-8504 (TDD) <u>sdrc@admin.fsu.edu</u> <u>http://www.disabilitycenter.fsu.edu/</u>

This syllabus and other class materials are available in alternative format upon request.

Free Tutoring from FSU

On-campus tutoring and writing assistance is available for many courses at Florida State University. For more information, visit the Academic Center for Excellence (ACE) Tutoring Services' comprehensive list of on-campus tutoring options at http://ace.fsu.edu/tutoring or tutor@fsu.edu. High-quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

Syllabus change policy

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.

University Attendance Policy

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.