



COURSE SYLLABUS

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SECTION 1: COURSE INFORMATION

Format: Eight weeks.

Course ID: NSCI 1012

Course Title: Scientific Investigation and the Pursuit Of Knowledge

College: College of Unrestricted Education

Prerequisites: None

Credit Hours: 2

Instructor: See the online course in MyFIRE for instructor contact information and availability.

Course Description

This course introduces the student to the scientific method and science epistemology and communication. Students will examine a controversial issue in 21st century society through the lenses of the scientific method and the scientific tradition.

Course Overview

In this age of ever-increasing scientific discovery and invention, it is important to understand how scientists and well-educated people evaluate the truth value of scientific concepts and theories by using logic, reasoning, and knowledge. This is the essence of what is called critical thinking as it relates to scientific literacy.

Critical thinking, in this course, is intended to be supported by concepts of logic, reasoning, the scientific method and scientific knowledge itself. Scientific education and scientific literacy through reasoning, for the non-scientist, are important goals in our society since they enhance everyone's ability to make judgements based on fact, particularly as related to scientific information. It is our intent in this course to provide the student with principles of logic and reasoning, as well as scientific fact, to enhance the student's critical thinking skills to validate the credibility of scientific information using these important skills.

"The central focus of critical thinking is the formulation and evaluation of arguments—and this is true whether the subject matter is ordinary or as weird as can be. Usually when we are doing critical thinking, we are trying either to devise arguments or to assess them. We are trying either (1) to demonstrate that a claim, or proposition, is true or (2) to determine whether in fact a claim is true. In either case, if we are successful, we are likely to increase our knowledge and expand our understanding—which is, after all, the main reason we use critical thinking in the first place." (Schick, T, Jr. & Vaughn, L., 2019, pp 34-35)

Course Workload

Time spent on course assignments will vary by student depending on familiarity with course content, reading rate of speed, writing rate of speed, and other individual factors. Based on averages for most students, it is estimated that the course workload estimate for this course is 7 hours per week.

Course Materials

Selected portions of the text-“How to Think About Weird Things—Critical Thinking for a New Age”, 2020, 8th Edition, Theodore Schick, Jr. and Lewis Vaughn.

Required and optional textbooks are accessed and ordered through [SEU's bookstore](#).

Disclaimer: The resources utilized in this course provide information, thoughts and insights that should encourage critical thinking on the part of the student. Please note as well that as an Assembly of God institution, Southeastern University does not necessarily endorse specific personal, religious, philosophical, or political positions found in these resources.

Course Topics

The purpose of this course is to introduce, reinforce, and measure learning on the following topics:

- Scientific method
- Critical thinking
- Science literacy
- Inductive and deductive reasoning
- Fallacies
- Fake news
- Epistemology

Intended Learning Outcomes

As a result of reading, study, and assessments in this course, the student should be able to:

1. Apply the scientific method to a current controversy.
2. Explain how science works to make new knowledge.
3. Describe the idea of “authority” in science.
4. Identify fallacies in scientific news reporting.
5. Describe the relationship of personal belief and scientific knowledge.

Late Work

Work ahead: For planned events (mission trips, vacations, surgeries) you are invited to work ahead in order to submit work by the due date. No permission is needed.

Request an extension: If you know you will not be able to turn work in on time, contact your professor at least 24 hours before the assignment is due.

Let the professor know about your circumstances and when you can turn the work in. If the professor decides to grant you an extension and you get the work in when you say you will, there will not be a penalty. You should only request an extension when something unforeseen comes up that you have no control over; a professor has no obligation to grant an extension and will be less inclined to do so if you are asking for one every week.

Late work: without prior arrangements, late work* submitted within one week of the original due date will be considered for partial credit. Work will ONLY be accepted for the first seven days after it is due. NO WORK will be accepted past the last day of the course.

*Discussion Posts: late participation in discussion forums is not accepted for late credit. The purpose of the discussion forum is to engage with your classmates on substantive ideas related to the course material, and your classmates will not revisit forums past the due dates. Similarly, professors will not revisit forums to grade past discussion due dates.

Professors of Foundational Core courses have been instructed to follow this policy to ensure fairness across all FC classes. Your professor will work with you if true emergencies occur, but your busy schedule will not be considered an emergency. If you have travel, a vacation, a wedding, or any other plannable event, it is up to you to communicate with your instructor to avoid grade penalties.

Extra Credit

None accepted.

SECTION 2: SOUTHEASTERN POLICIES

Academic Policies

View this link to see Southeastern's Policies regarding SEU's Mission and Vision Statements, Title IX Statement, Student Services, Class Participation, Official Email, MyFIRE Use, Technical Difficulties, Technical Support, Disability Statement, Academic Honesty, Course Evaluation, Official Withdrawal, Grading Scale, and Netiquette.

SECTION 3: COURSE SCHEDULE

The **Course Schedule** provides a listing of your work in this course. The assessments are listed by Module and include the due dates and point values.

Note: Assignments are due by 11:59 p.m. EST on the due date, unless otherwise noted.

AIM, LEARN, AND APPLY DESCRIPTIONS

Aim



When you see the Aim icon, you will be introduced to topics and ideas that will be covered throughout this module. The AIM will also provide you with a glimpse into your learning objectives and an introduction to this module.

Learn



When you see the Learn icon, all of your reading assignments will be listed and may include additional resources that your instructor is providing to help you complete the activities and assessments for the module.

Apply



When you see the Apply Icon, it will be time to demonstrate your learning for the module. The items here are those in which you'll be graded and may include discussions, activities, assignments, quizzes, exams, and projects.

MODULE 1

XX/XX/XX – XX/XX/XX



- Apply the scientific method to a current controversy.
- Explain how science works to make new knowledge.



- View/read resources (provided in the course).



- Module 1 Discussion Forum
 - ILOs: 1, 2
 - Due: Saturday, Tuesday
 - Points: 50
- Module 1 Quiz
 - ILOs: 1, 2
 - Due: Saturday
 - Points: 10
- Module 1 Final Project Assignment: Choose a Topic
 - ILOs: 1, 2
 - Due: Tuesday
 - Points: 20

MODULE 2:
XX/XX/XX – XX/XX/XX



- Understand the scientific method and its purpose
- Apply the scientific method to a current controversy.
- Explain how science works to make new knowledge.
- Describe the idea of “authority” in science.



- View resource (provided in the course).



- Module 2 Discussion Forum
 - ILOs: 1, 2, 3
 - Due: Saturday, Tuesday
 - Points: 50
- Module 2 Quiz
 - ILOs: 1, 2, 3
 - Due: Saturday
 - Points: 10
- Module 2 Final Project Assignment: Your Topic in the News
 - ILOs: 2, 3
 - Due: Tuesday
 - Points: 60

MODULE 3:
XX/XX/XX – XX/XX/XX



- Understand Critical Thinking and Scientific Literacy
- Apply the scientific method to a current controversy.
- Explain how science works to make new knowledge.
- Describe the idea of “authority” in science.



- View/read resources (provided in the course).



- Module 3 Discussion Forum
 - ILOs: 1, 2, 3
 - Due: Saturday, Tuesday
 - Points: 50
- Module 3 Quiz
 - ILOs: 1, 2, 3
 - Due: Saturday
 - Points: 10
- Module 3 Final Project Assignment: History and Politics
 - ILOs: 1, 5
 - Due: Tuesday
 - Points: 60

MODULE 4:
XX/XX/XX – XX/XX/XX



- Understand the difference between deductive and inductive arguments and the types of inductive arguments (enumerative, analogical, and hypothetical inductive arguments).
- Apply the scientific method to a current controversy.



- Arguments, Good, Bad, and Weird; Arguments and Deductive Reasoning--pp. 34-43.
- View resources (provided in the course).



- Module 4 Discussion Forum
 - ILOs: 1, 2, 3
 - Due: Saturday, Tuesday
 - Points: 50
- Module 4 Quiz
 - ILOs: 1, 2, 3
 - Due: Saturday
 - Points: 10
- Module 4 Final Project Assignment: Annotated Bibliography
 - ILOs: 1, 2, 3
 - Due: Tuesday
 - Points: 60

MODULE 5:
XX/XX/XX – XX/XX/XX



- Apply the scientific method to a current controversy.



- Arguments, Good, Bad, and Weird; Inductive Arguments--pp. 43-50.



- Module 5 Discussion Forum
 - ILOs: 1
 - Due: Saturday, Tuesday
 - Points: 50
- Module 5 Quiz
 - ILOs: 1
 - Due: Saturday
 - Points: 10
- Module 5 Final Project Assignment: What Makes an Expert?
 - ILOs: 1, 2, 3
 - Due: Tuesday
 - Points: 60

MODULE 6:
XX/XX/XX – XX/XX/XX



- Comprehend informal fallacies, and fallacious arguments based on unacceptable premises, irrelevant premises, and insufficient premises.
- Identify fallacies in scientific news reporting.



- Arguments, Good, Bad, and Weird; Informal Fallacies and Premises--pp. 50-56.
- View resources (provided in the course).



- Module 6 Discussion Forum
 - ILOs: 4
 - Due: Saturday, Tuesday
 - Points: 50
- Module 6 Quiz
 - ILOs: 4
 - Due: Saturday
 - Points: 10
- Module 6 Final Project Assignment
 - ILOs: 1
 - Due: Tuesday
 - Points: 80

MODULE 7:
XX/XX/XX – XX/XX/XX



- Comprehend, statistical fallacies related to misleading averages, missing values, and hazy comparisons.
- Identify fallacies in scientific news reporting.



- Arguments, Good, Bad, and Weird; Statistical Fallacies--pp. 56-58.
- View resources (provided in the course).



- Module 7 Discussion Forum
 - ILOs: 1, 4
 - Due: Saturday, Tuesday
 - Points: 50
- Module 7 Quiz
 - ILOs: 1, 4
 - Due: Saturday
 - Points: 10
- Module 7 Final Project Assignment: Faith and Your Topic
 - ILOs: 5
 - Due: Tuesday
 - Points: 70

MODULE 8:
XX/XX/XX – XX/XX/XX



- Apply the scientific method to a current controversy.
- Explain how science works to make new knowledge.
- Describe the idea of “authority” in science.
- Identify fallacies in scientific news reporting.
- Describe the relationship of personal belief and scientific knowledge.



- Arguments, Good, Bad, and Weird; Evaluating Sources: Fake News--pp. 58-62.
- Read resources (provided in the course).



- Module 8 Discussion Forum
 - ILOs: 1, 3, 4, 5
 - Due: Saturday, Tuesday
 - Points: 50
- Module 8 Final Project Assignment: PowerPoint or Prezi
 - ILOs: 1, 3, 4, 5
 - Due: Tuesday
 - Points: 120

SECTION 4: ASSESSMENTS

Discussions

Description

Weekly discussions are required.

Total Possible Points

400

Reading/Viewing quizzes

Description

Quizzes on the required reading and viewing from each week.

Total Possible Points

70

SECTION 4: ASSESSMENTS

Assignments

Description
Weekly assignments and Final Project.
Total Possible Points
530
