

## Tips for Syllabus Preparation

by  
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It is important for syllabi to be prepared in a consistent way so we can provide students with consistent messages on those topics that are important to the development of students in our programs. Among these essentials are communicating expectations for learning and the importance of professionalism and personal integrity. This guidance provides background information for ensuring that these elements are met.

### Communicating Expectations

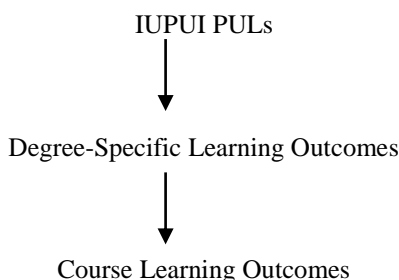
The IUPUI *Code of Student Rights, Responsibilities, and Conduct (Student Code)*, which can be accessed at <http://www.iupui.edu/~sldweb/dos/>, provides clear statements of the rights that students have with respect to the classroom experience. In Part I: Student Rights (A. Rights in the Pursuit of Education), the Student Code affirms that students “can expect to interact with faculty who act professionally; provide clearly stated class goals; provide clear expectations for class performance and evaluation; meet classes as scheduled; are accessible for office hours, appointments or consultation; and maintain a clear connection between course content and the most recently approved course description.” This statement provides the framework for our efforts to ensure that SPEA faculty provides students with a positive learning environment that emphasizes excellence in teaching.

As we strive to hold ourselves and students to high standards, it is important for us to establish our expectations for performance and professionalism and to communicate these expectations as often as possible. We do this in a number of ways, including the undergraduate induction and graduate student orientation, the student handbooks, and the syllabus and the syllabus addendum.

The syllabus and syllabus addendum are two mainstays for communicating expectations. The syllabus should provide students with the details needed to understand what the course will cover, what they will learn, what is expected of them, and how their work will be evaluated. It is the foundation for explaining to students the skills and knowledge they will acquire upon successful completion of the course – in other words, the learning outcomes.

At the undergraduate level, we have a three-tiered approach that explains to students what they will be able to do upon graduation (see Figure 1). At the top, the driver is IUPUI’s award-winning outcomes-based educational approach – the Principles of Undergraduate Learning (PULs). The PULs articulate the skills and knowledge that students will have upon successful completion of a program of study at IUPUI. Within SPEA, the faculty has determined degree-specific learning outcomes and how the PULs are addressed within the requirements for each degree. At the foundational level, each faculty member contributes by stating the learning outcomes for the course he/she teaches and how the PULs are addressed within the course. This multi-layered, integrated approach allows us to communicate clearly to students how our courses, degrees, and university experience will foster their intellectual and personal growth and development and what they will be able to do upon graduation.

Figure 1. What will SPEA Undergraduate Students Be Able to Do Upon Graduation?



At the graduate level, we communicate what students will be able to do upon graduation through degree-specific competencies and course-specific learning outcomes.

Instructors of graduate and undergraduate courses should view the syllabus as a contract between the instructor and student. Making the syllabus as complete as possible and sticking to the rules and schedule that are established in the syllabus will ensure a smooth start and finish to the semester. This tip sheet provides background and help for preparation of the syllabus.

Some key elements of the syllabus include course learning outcomes; inclusion of Principles of Undergraduate Learning (for undergraduate courses); and instructor policies for attendance, late work, collaboration, and grading. Each of these is addressed briefly below. The remaining elements, while no less important, are perhaps more self-explanatory and can be found on the SPEA Syllabus Template, which is distributed at the start of each semester, along with instructions for completing the template.

Attachment 1 provides the Principles of Undergraduate Learning (PULs), and Attachment 2 contains an example undergraduate syllabus – note that the schedule of events in this syllabus is abbreviated because this was a one-day course. Three-credit-hour courses will require a weekly schedule with readings; exam dates should also be included. A graduate syllabus would follow this basic format with the exception that the PULs would not be included.

The Director of Academic Affairs is available to assist you with syllabus preparation, and the Program Director will be able to help with content questions such as which textbook to use, level of difficulty, etc.

### **Writing Action-based Course Learning Outcomes**

The course learning outcomes are statements of the knowledge, skills, and abilities that a student will have mastered upon successful completion of the course. An easy way to think of learning outcomes is to ask the question: “What should my student be able to do when he/she completes the course?” Learning outcomes should be specific and measurable, and they should be framed carefully using an action verb to communicate what the student will be able to do (for example, compare and contrast the two sides of the evolution/intelligent design debate.)

The learning outcomes should be appropriate to the level of the course, and should not be limited to outcomes that focus only on knowledge/remembering (words such as define, describe, label, list, name, select, etc.) and understanding/comprehension (words such as classify, describe, discuss, explain, give examples, paraphrase, summarize, etc.).

It is also important to include outcomes that represent higher levels of thinking such as applying, analyzing, and creating knowledge. Examples of verbs that can be used to demonstrate application of knowledge are apply, articulate, assess, compute, construct, demonstrate, develop, extend, implement, operationalize, predict, project, show, solve, use, etc. Verbs that represent analysis include analyze, categorize, compare, contrast, correlate, diagram, differentiate, prioritize, etc. Verbs that represent creation/synthesis of knowledge include appraise, compile, create, critique, criticize, design, develop, formulate, hypothesize, invent, integrate, model, plan, defend, interpret, judge, justify, support.

The difficult part of writing a learning outcome is figuring out what you believe students should be able to do upon completion of the course. Having measurable outcomes allows the student to know what he or she is expected to master, and these outcomes, in turn, allow the faculty member to design and convey to the student the ways in which that mastery will be evaluated (measured).

- 1) One way to organize your ideas about what student’s should be able to do is to use Bloom’s taxonomy (or a revision by Anderson and Krathwohl in 2001) to guide the type of learning that will take place. In most of our courses, we will emphasize mastery of mental skills (knowledge - cognitive skills) rather than mastery of growth in feelings or emotional areas (attitudes - affective skills) or manual or physical skills (psychomotor skills). However, it may be appropriate to include the affective and psychomotor skills, depending on the course.

The Bloom and Anderson taxonomies identify different types of abstraction/thinking/knowing (thinking) and organize these into lower and higher levels of abstraction. In the Bloom’s taxonomy, lower levels of thinking include knowing, remembering, comprehension, understanding, and applying. Higher levels include analysis, synthesis, and evaluation.

All faculty members are encouraged to incorporate higher levels of thinking into their courses, regardless of the course level. The University of Washington’s “Major Categories in the Taxonomy of Educational Objectives” at

<http://faculty.washington.edu/krumme/guides/bloom1.html> is a good resource for learning about Bloom's taxonomy and it contains outcome learning action verbs that will help you write the learning outcomes statements.

- 2) After you have settled on the most important expectations for your course, write the outcomes using action verbs such as the ones listed above to describe what students should be able to do when they finish the course. Avoid words such as understand, appreciate, learn, or know because these are difficult to evaluate. The websites above and below have examples of action verbs that might be useful to you.

There are many good resources for writing action-based learning outcomes; one such resource is the American Association of Law Libraries Writing Learning Outcomes, which is available at <http://www.aallnet.org/prodev/outcomes.asp>.

As noted earlier, learning outcomes for most classes are likely to include both lower and higher levels of thinking. Upper level undergraduate courses and graduate courses should emphasize higher levels of thinking.

- 3) Next, identify what types of assignments or testing will enable you to determine the extent to which a learning outcome has been achieved and determine how you determine the level of mastery the student has achieved. You may decide to evaluate learning using an essay exam, a paper, a simulation, a field exercise, a homework assignment involving problem-solving, etc. You can use the same or similar key words used to write the learning outcomes to design assignments and exams – thus providing a seamless transition from learning outcomes through assessment of learning.

A grading rubric explains how a paper, project, assignment, exam, etc. will be graded. That is, what constitutes a grade of A, B, C, and so forth. It explains how the grades are differentiated and gives clear expectations for demonstrating different levels of mastery. Using a rubric is a good way to ensure that your grading is uniform and reproducible. An example of a rubric for a general evaluation of college papers is available at <http://www.fordham.edu/halsall/med/rubric.html>.

- 4) Review your expected outcomes, methods for determining mastery of the outcomes, and rubrics – tweak each as needed.
- 5) Be sure to link back to the course learning outcomes as you move through the semester – periodically reminding students about the course learning outcomes will help ensure they understand your goals for them and are able to see how their knowledge builds during the course of the semester. It is also important to ensure that you are assessing students on the outcomes you have established. You can use tests, papers, in-class exercises, etc., and your assessments may be graded or not. If work is not graded, however, you should give feedback to students in some manner as though the work were graded. If you assign papers, be sure that you provide comments other than simply a letter grade.

## **Integrating the PULs – Undergraduate Courses Only**

- 1) Determine which PULs are emphasized in your course (see Attachment 1). IUPUI does not have a core curriculum or distribution requirements in the traditional sense. However, the campus-wide faculty has defined undergraduate education at IUPUI in terms of the IUPUI PULs. The PULs are expectations of all majors for general education at IUPUI. The very specific content-based learning outcomes that you provide for your course tie back to the learning outcomes for our majors, and overall, these fit into PUL 4. Intellectual Breadth, Depth, and Adaptiveness. Students are gaining in-depth knowledge through the courses in the major, but they will also encounter to varying degrees the other PULs. In sum, the PULs are statements of the skills and knowledge that an IUPUI student should have upon graduation with an undergraduate degree from IUPUI. You contribute to this campus initiative by explaining how the PULs that you deem important to your course are addressed in the course.
- 2) For each emphasized PUL, identify how your course contributes to these abilities. A simple statement is adequate, but you can elaborate as appropriate. The attached syllabus (see Attachment 2) provides some examples.
- 3) For each course, one PUL is designated as having major emphasis. The instructor may list other PULs as being important, and indeed, it is possible to have more than one PUL emphasized to have a major emphasis, but only one receives the designation of 'major emphasis.' At the start of each semester, the list courses and the PUL of major emphasis will be provided to the faculty.

## Specifying Course and SPEA Policies

SPEA does not have established universal policies for attendance, submitting late work and time-extensions, make-up exams, and collaboration. A faculty member is expected to determine policies in these areas, and other policies may be established at the instructor's discretion. SPEA does have an administrative withdrawal policy, but leaves its use up to the instructor. Although faculty members have discretion in terms of determining course policies in these areas, we do expect that each faculty member will apply his/her policies uniformly and fairly.

Administrative withdrawal is a policy that is available only to undergraduate instructors of 100- and 200-level courses. It allows faculty to remove 'no shows' through an administrative process. If an instructor of a multi-section course (such as V170), all instructors of that course must agree to do so. If you decide you wish to use administrative withdrawal there is a paragraph notifying students of the process that must appear in the syllabus (see faculty handbook). Additionally, faculty must notify the Director of Academic Affairs about three weeks in advance of the semester that they wish to use this policy.

SPEA strongly supports the campus policies regarding academic and personal misconduct, and to demonstrate this support to students, we cover these topics in the SPEA Syllabus Addendum, a document that is sent to the faculty just prior to the start of each semester. The addendum makes clear that SPEA takes seriously instances of academic and personal misconduct, and faculty are responsible for taking action when these issues arise. Because the addendum covers these topics, faculty do not need to do so in detail in their syllabi, but they may want to reaffirm their support of these policies.

The two most common types of academic misconduct are plagiarism and collaboration (cheating). It is especially important for faculty who require papers or other assignments to review what constitutes plagiarism with their students. And, faculty should also state in the syllabus (and orally) what constitutes legitimate collaboration in the course. For example, students may discuss how to solve problems on a homework assignment, but the work that is submitted must be the student's own work. Or, collaboration is not allowed except in assignments that specifically require group work. Again, faculty members have discretion in terms of deciding what level of collaboration is allowed. Faculty members do not have discretion about what constitutes academic misconduct and how to respond to it – these are campus and SPEA policies.

SPEA also expects faculty to foster an environment that promotes professionalism and exemplary personal conduct by and among students. We expect faculty to address problems with personal conduct (uncivil behavior) as these issues arise. The faculty handbook provides additional information. Faculty should state orally their support of SPEA's policy for exemplary personal conduct and restating this in the syllabus as a course policy is appropriate, but not required because this is covered in the Syllabus Addendum.

## Specifying Assessment and Grading

Students should be assessed on their academic performance in a consistent and fair way. The assessment of student learning should be linked to the learning outcomes in a way that makes sense for the course content. Faculty members can use exams, homework problem-solving, papers, case studies, simulations, role-playing, and a variety of other techniques to provide students with opportunities to demonstrate their learning.

Regardless of which method(s) is used, it is important to specify the general requirements for assessing and grading a student's performance in the course. Details for each assignment are not needed in the syllabus; these can be provided at the time the assignments are made. However, it is important to provide students with a breakout of what portion of the final grade will be derived from each evaluation element and what grading scale will be used for the final grade. For example:

Participation 5%; Homework – 5%; Position Paper – 20%; Exams – 70%

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

When plus and minus grades are to be assigned, the values for reaching these thresholds should be included in the grading scale.

In the example above, participation points are included. Participation points can be awarded for attendance or for substantive contributions to the class discussions. Whether or not to include participation or to give points for attendance is an individual faculty decision. However, points for attendance should be modest (no more than a few percent) – students

are expected to attend class, but at 100- and 200-level courses, points for attendance may provide additional motivation for some students to come to class, which we know will increase the probability of success.

The decision to award participation points for discussion and other activities should be based on the course methods – if discussion and other participation are essential to the course, participation points make sense. The number of points to be awarded depends on the importance of participation and the instructor's ability to score students in a fair and equitable way. It is important to explain to students on what basis participation will be scored and to ensure that participation will be meaningful.

This section should also provide clear statements of penalties for late assignments, missing class, being tardy, etc. We also suggest including a statement about extra credit – will you provide opportunities or not? This is an individual faculty decision; however, if you decide to provide extra credit, it should be a relatively small proportion of the overall course grade. Letting students know about this in advance will reduce the likelihood that you will be petitioned for extra credit opportunities later in the semester. It also ensures equitable treatment for all students.

## Attachment 1. IUPUI Principles of Undergraduate Learning (PULs)

The PULs, which were approved by the IUPUI faculty in 1998, are the foundational skills that we expect all of our students to gain during their experience at IUPUI. The skills embodied in the PULs are gained in both the general education requirements and in the major field of study. The PULs, with the exception of the definition of critical thinking, were revised in January 2006. The critical thinking PUL was revised in May 2007.

- 1. Core Communication and Quantitative Skills** - The ability of students to express and interpret information, perform quantitative analysis, and use information resources and technology – the foundational skills necessary for all IUPUI students to succeed.

**Outcomes:** Core communication and quantitative skills are demonstrated by the student's ability to a) express ideas and facts to others effectively in a variety of formats, particularly written, oral, and visual formats; b) comprehend, interpret, and analyze ideas and facts; c) communicate effectively in a range of settings; d) identify and propose solutions for problems using quantitative tools and reasoning; e) make effective use of information resources and technology.

- 2. Critical Thinking** – The ability of students to engage in a process of disciplined thinking that informs beliefs and actions. A student who demonstrates critical thinking applies the process of disciplined thinking by remaining open-minded, reconsidering previous beliefs and actions, and adjusting his or her thinking, beliefs and actions based on new information.

**Outcomes:** Critical thinking begins with the ability of students to remember and understand, but it is truly realized when the student demonstrates the ability to a) apply, b) analyze, c) evaluate, and d) create knowledge, procedures, processes, or products to discern bias, challenge assumptions, identify consequences, arrive at reasoned conclusions, generate and explore new questions, solve challenging and complex problems, and make informed decisions.

- 3. Integration and Application of Knowledge** – The ability of students to use information and concepts from studies in multiple disciplines in their intellectual, professional and community lives.

**Outcomes:** Integration and application of knowledge are demonstrated by the student's ability to a) enhance their personal lives; b) meet professional standards and competencies; c) further the goals of society; and d) work across traditional course and disciplinary boundaries.

- 4. Intellectual Depth, Breadth, and Adaptiveness** – The ability of students to examine and organize disciplinary ways of knowing and to apply them to specific issues and problems.

**Outcomes:** Intellectual depth, breadth, and adaptiveness are demonstrated by the student's ability to a) show substantial knowledge and understanding of at least one field of study; b) compare and contrast approaches to knowledge in different disciplines; c) modify one's approach to an issue or problem based on the contexts and requirements of particular situations.

- 5. Understanding Society and Culture** – The ability of students to recognize their own cultural traditions and to understand and appreciate the diversity of the human experience.

**Outcomes:** Understanding society and culture is demonstrated by the student's ability to a) compare and contrast the range of diversity and universality in human history, societies, and ways of life; b) analyze and understand the interconnectedness of global and local communities; and c) operate with civility in a complex world.

- 6. Values and Ethics** – The ability of students to make sound decisions with respect to individual conduct, citizenship, and aesthetics.

**Outcomes:** A sense of values and ethics is demonstrated by the student's ability to a) make informed and principled choices and to foresee consequences of these choices; b) explore, understand, and cultivate an appreciation for beauty and art; c) understand ethical principles within diverse cultural, social, environmental and personal settings.

## Attachment 2. Example Syllabus

### Indiana University-Purdue University Indianapolis School of Public and Environmental Affairs Spring, 2006

#### Course

**Number/Title:** SPEA-E100/V260 Religion and Science in Education (1 credit)

**Class Number:** 26363/26220

**Day and Time; Location:** March 4 (8 am to 3:30 pm) and April 15 (8 am to 3 pm); BS 2004

#### INSTRUCTOR

**Instructor:** Dr. Ritchie

**Office Hours/Location:** M, W (8 am to 10 am) or by appointment

**Telephone:** 274-3752 (If you reach voice mail, please leave a message)

**E-mail Address:** Please use the message function in Oncourse.

#### COURSE DESCRIPTION

This one-credit course seeks to provide students with an introduction to the public policy debate surrounding what should be taught in public schools about the origins and development of man. The central question is: Should science curricula in public schools include the teaching of evolution, intelligent design, or creationism? You may already have an opinion, perhaps strongly held, about this public policy debate, and your opinion may be based on religious teaching that you have received, or your opinion may be based on what you were taught in school.

A deep study of the central question requires considerable reflection and study of multiple disciplines including geology, paleontology, genetics, comparative anatomy, physiology, religion, etc. In the best of worlds, public policy decisions made by legislators, school board officials, and others are shaped in consultation with experts in various fields. However, these decisions are also made with less than perfect knowledge.

Our study of this public policy debate will focus on understanding the underpinnings of both sides of the argument and using this information to support our positions on the issue. In reaching our individual decisions about this question, we will need to have an understanding of the terminology and methods related to science and religion.

There are no prerequisites for this course.

#### REQUIRED COURSE MATERIALS

A textbook is not required for this course. The required readings can be accessed via the Internet.

Explanations of Science and Terms Related the Evolution:

The PBS Evolution Library has many resources that will be helpful in learning about the science of evolution. I would suggest exploring the teacher/student resources at

<http://www.pbs.org/wgbh/evolution/educators/index.html>. The sources below come from this website.

- ✓ Interactive web activity: "An Origin of Species." (shows how a species can evolve; locate the 1<sup>st</sup> box of the Featured Multimedia sources of the PBS Evolution Library website link at <http://www.pbs.org/wgbh/evolution/library/05/index.html>)
- ✓ Interactive web activity: "All in the Family." (shows the connections between living species, locate the 2<sup>nd</sup> box of the Featured Multimedia sources of the PBS Evolution Library website link at

<http://www.pbs.org/wgbh/evolution/library/05/index.html> [Be sure to click on full view when you use the tool. This will allow you to see the skeletal differences that illustrate the connections.]

- ✓ Web Video: "Evolving Ideas: Isn't Evolution Just a Theory?" (discusses theory as a scientific term; locate the 2<sup>nd</sup> box of the What is Science? sources at the PSB Evolution Library website link at <http://www.pbs.org/wgbh/evolution/library/09/index.html>)
- ✓ Frank Wolf's Home Page. "Appendix E: Introduction to the Scientific Method." [http://teacher.nsrj.rochester.edu/PHY\\_LABS/AppendixE/AppendixE.html](http://teacher.nsrj.rochester.edu/PHY_LABS/AppendixE/AppendixE.html)
- ✓ "Evolution is a Fact and a Theory" by Laurence Moran <http://www.talkorigins.org/faqs/evolution-fact.html>

\*\*\*University of California Berkeley. Museum of Paleontology at <http://www.ucmp.berkeley.edu/index.html> (This website is highly recommended as a resource to explore. You don't have to go through the entire website, but it can serve as another very good resource to help you understand the science of evolution. There are a number of other university website that will also be helpful to you.)

#### Pro-Evolution:

These resources are drawn from a variety of sources that include arguments that relate to the position that intelligent design is not science.

- ✓ Science and Creationism: A View from the National Academy of Sciences, Second Edition (1999) National Academy of Sciences (NAS). <http://fermat.nap.edu/books/0309064066/html/>
- ✓ "The Faith That Dare Not Speak Its Name" by Jerry Coyne [http://pondside.uchicago.edu/cluster/pdf/coyne/New\\_Republic\\_ID.pdf](http://pondside.uchicago.edu/cluster/pdf/coyne/New_Republic_ID.pdf) [A review of the book *Of Pandas and People* by Davis and Kenyon]
- ✓ "Devolution" by H. Allen Orr [http://www.newyorker.com/fact/content/articles/050530fa\\_fact](http://www.newyorker.com/fact/content/articles/050530fa_fact)
- ✓ "intelligent design" The Skeptic's Dictionary website. Robert Todd Carroll <http://skepdic.com/intelligentdesign.html>
- ✓ "NABT's Statement on Teaching Evolution," "Supporting Materials." National Association of Biology Teachers. [http://www.nabt.org/sub/position\\_statements/evolution.asp](http://www.nabt.org/sub/position_statements/evolution.asp)
- ✓ "Answering the Biochemical Argument from Design" by Kenneth R. Miller (click on the 4<sup>th</sup> article in the middle column of the website link at <http://www.millerandlevine.com/km/evol/>)

#### Pro-Intelligent Design:

These resources are drawn from the Discovery Institute website, which contains many additional articles and resources. The ones I've included represent a variety of authors and the articles include arguments that relate to the position that intelligent design is not science.

- ✓ "The Origin of Intelligent Design: A brief history of the scientific theory of intelligent design" by Jonathan Witt (locate the 5<sup>th</sup> article in the 1<sup>st</sup> column of the website link at <http://www.discovery.org/csc>)
- ✓ "The Scientific Status of Intelligent Design: The Methodological Equivalence of Naturalistic and Non-Naturalistic Origins Theories" by Stephen C. Meyer (locate the 4<sup>th</sup> article in the 1<sup>st</sup> column of the website link at <http://www.discovery.org/csc>)
- ✓ "Survival of the Fakest" by Jonathan Wells (locate the 5<sup>th</sup> article under Essential Articles at <http://www.discovery.org/csc/essentialReadings.php>)
- ✓ "Design for Living" by Michael Behe (external link at the Discovery Institute website at <http://www.discovery.org/scripts/viewDB/index.php?command=view&id=2415>)
- ✓ "The Theory of Irreducible Complexity" by Michael Behe (locate the 3<sup>rd</sup> article in the 1<sup>st</sup> column of the website link at <http://www.discovery.org/csc>)
- ✓ "Unlocking the Mystery of Life" by Stephen C. Meyer and W. Peter Allen (locate the 3<sup>rd</sup> item under Video and Curriculum in the 2<sup>nd</sup> column) of the website link at <http://www.discovery.org/csc>)

#### Pro/Con Views:

- ✓ "Evolution: Science and Belief. Intelligent Design?" <http://www.actionbioscience.org/evolution/nhmag.html> [Includes three sets of pro/con views; we will use this in one of our assignments.]
- ✓ Audio Debate: "Intelligent Design: The Diane Rehm Show." A debate between intelligent designer William Dembski (a mathematician and philosopher, Baylor University, Waco, Texas) and evolutionist Eugenie C. Scott (a human biologist and Director, National Center for Science Education) PBS Evolution Library. [http://www.pbs.org/wgbh/evolution/library/08/1/1\\_081\\_03.html](http://www.pbs.org/wgbh/evolution/library/08/1/1_081_03.html).



## RECOMMENDED READINGS

**NOTE: This section is optional.**

Evolution Timeline:

- “Evolution Revolution” PBS Evolution Library. <http://www.pbs.org/wgbh/evolution/library/08/index.html> (NOTE: This is an interactive timeline of events in the history of the evolution Debate from 1600 to the present; includes graphics and information about the rise of evolution and the controversies about it – an informative, easy to use tool. the rise of a revolutionary idea and the controversies that surround it.)

Reconciling Science and Religion:

- “Science and Faith Roundtable.” PBS Evolution Library. <http://www.pbs.org/wgbh/evolution/library/08/index.html> (NOTE: This roundtable includes panelists who discuss how evolution can be reconciled with religious beliefs. It provides another side of the debate.)

Eugenics:

- “In the Name of Darwin.” by Daniel J. Kevles, PBS Evolution Library. (NOTE: This essay explores the misapplication of the notion of the ‘survival of the fittest’ to race purification espoused in social Darwinism. This notion was and still is explosive in terms of its impact and implications.)

Legal Cases and Opinions; Education Policy:

- “Intelligent Design in Public School Science Curricula: A Legal Guidebook” by David K. DeWolf, Stephen C. Meyer, and Mark E. DeForrest <http://www.arn.org/docs/dewolf/guidebook.htm>
- “The Scopes Trial: An Introduction” by Douglas Linder <http://www.law.umkc.edu/faculty/projects/FTrials/scopes/scopes.htm>
- Evolution Education and the Law: Major Cases (1925-1987) [http://www2.ncseweb.org/wp/?page\\_id=18](http://www2.ncseweb.org/wp/?page_id=18)  
Also, follow links to: Epperson v. Arkansas, McLean v. Arkansas Board of Education, Edwards v. Aguillard, Selman v. Cobb, Eight Major Court Decisions
- “Darwin in the Dock” by Margaret Talbot <http://www.newamerica.net/index.cfm?pg=article&DocID=2745>
- “Judge rules against ‘intelligent design’” <http://www.msnbc.msn.com/id/10545387/>
- “Evolution lesson plan goes in for redesign” <http://www.cnn.com/2006/EDUCATION/02/15/evolution.debate.htm> CANT ACCESS
- Ohio Citizens for Science <http://science2.marion.ohio-state.edu/ohioscience/lesson-plans.html>  
Follow links to: Background to the Critical Analysis of Evolution lesson plan, Critical Analysis of Evolution
- “Kansas school board redefines science” <http://www.cnn.com/2005/EDUCATION/11/08/evolution.debate.ap/>
- “75 years after the Scopes trial pitted science against religion, the debate goes on” <http://archives.cnn.com/2000/LAW/07/13/scopes.monkey.trial/>

Websites:

- Actionbioscience: <http://www.actionbioscience.org/evolution/nhmag.html#learnmore>
- National Academy of Sciences: <http://www.nas.edu/>  
(In the ‘Search’ box, type in evolution, creationism, or intelligent design for access to articles on these topics.)
- The Pew Forum on Religion & Public Life: <http://pewforum.org>  
(Link to ‘Religion & Public Schools’ at the bottom of the page in the ‘Navigate by Issue’ box. The Religion & Public Schools page has a wealth of resources – including many newspaper articles and transcripts.)
- The Skeptics Dictionary: <http://skeptdic.com/intelligentdesign.html>
- National Center for Science Education: [http://www2.ncseweb.org/wp/?page\\_id=18](http://www2.ncseweb.org/wp/?page_id=18)
- National Science Teachers Association: <http://www.nsta.org/>
- American Institute of Biological Sciences: [http://www.aibs.org/public-policy/teaching\\_evolution.html](http://www.aibs.org/public-policy/teaching_evolution.html)

- Discovery Institute: <http://www.discovery.org/>
- <http://www.law.umkc.edu/faculty/projects/FTrials/scopes/scopes.htm>
- Access Research Network: <http://www.arn.org/>
- Intelligent Design and Evolution Awareness Center: <http://www.ideacenter.org/>

Books:

*On the Origin of Species* by Charles Darwin

*Of Pandas and People: The Central Question of Biological Origins* by Percival Davis and Dean H. Kenyon

*The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe Without Design* by Richard Dawkins

*Darwin's Black Box: The Biochemical Challenge to Evolution* by Michael J. Behe

*Tower of Babel: The Evidence against the New Creationism* by Robert H. Pennock

*Intelligent Design: The Bridge between Science & Theology* by William A. Dembski

*What Evolution Is* by Ernst Mayr

*Darwin on Trial* by Philip E. Johnson

*Trial and Error: The American Controversy over Creation and Evolution* by Edward J. Larson

## COURSE LEARNING OUTCOMES

Upon successful completion of this course, a student should be able to:

- ✓ explain and use terms related to the evolution/intelligent design debate
- ✓ compare and contrast the two sides of the evolution/intelligent design debate
- ✓ explore attitudes about the evolution/intelligent design debate by analyzing editorial cartoons
- ✓ articulate and support a position on this issue using a variety of sources
- ✓ comprehend and appreciate the scientific and cultural dimensions of the evolution/religion debate

## PRINCIPLES OF UNDERGRADUATE LEARNING (PULs)

The activities in this course are linked to the following Principles of Undergraduate Learning:

- ✓ Core Communication Skills — You will develop your ability to use the library and Internet resources to gather information and write a position paper based on your research. You will demonstrate the ability to write a narrowly focused position paper that is clear, concise, and well-supported.
- ✓ Critical Thinking — You will demonstrate the ability to comprehend, interpret, and analyze a complex issue such as the evolution/intelligent design debate. You will evaluate the logic, validity, and relevance of information and synthesize information from diverse sources in order to arrive at reasoned conclusions. (Major Emphasis)
- ✓ Understanding Society and Culture — In studying the evolution/religion debate, you will become more aware of the diversity of opinion on this issue and have a better appreciation of the reasons for these differences.

## SPEA POLICIES

The SPEA Syllabus Addendum, which is attached to this syllabus, explains SPEA's academic policies for Academic Misconduct, Civility and Disorderly Conduct, Communication between Faculty and Students, Course Withdrawal, Incompletes, Grade Changes, Students Called to Active Duty, and the Final Exam Schedule. Each student is responsible for understanding and following all school policies.

## INSTRUCTOR'S CLASSROOM POLICIES

Because this course meets on only two days, it is essential to arrive on time, stay for the entire time, and complete the assigned work by the due dates. Missing one day is the same as missing 50% of the course. If you are unable to attend the scheduled class meetings, you will be required to withdraw from the course.

Attendance will be taken at the start of the day and at the end of the day. If you leave early without permission, you will be counted as absent for the day.

In general late work is not accepted, but I recognize that extenuating circumstances may exist. I will consider such requests on a case by case basis, but all students will be treated equitably.

In this class, all work is to be independent, unless otherwise indicated. Because you are writing individual papers, it is essential for you to understand what constitutes plagiarism and how to avoid it. The Addendum provides a website at the IU School of Education for a tutorial designed that will ensure that you do not plagiarize. You are required to complete the tutorial and provide a certificate of completion to me when you submit your papers.

## ASSESSMENT AND GRADING

In this course, you are expected to take the initiative to read and study a variety of resources to explore this topic. This requires planning and self-discipline. Waiting until the night before an assignment is due or the last few days (or week) to research and write your position paper is a huge mistake and will likely result in a poorly developed assignment or paper and low grades.

This course does not provide extra credit opportunities.

You will be expected to complete four short assignments and a position paper on the central topic for this course: Should science curricula in public schools include the teaching of evolution, intelligent design, or creationism? Instructions for the short assignments and the position paper will be posted on Oncourse. The assignments and values are as follows:

1. Survey Completion – 10 points (5% of final grade)
2. Exploring Attitudes about the Evolution/Intelligent Design Debate – 10 points (5% of final grade)
3. Foundational Knowledge: Defining Terms – 10 points (5% of final grade)
4. Exploring Opposing Viewpoints – 10 points (5% of final grade)
5. Compare and Contrast Science Standards – 10 points (5% of final grade)
6. Position Paper – 150 points (75% of final grade)

The grading scale (in percent) for the final grade is:

A+ 98-100, A 93-97, A- 90-92  
B+ 87-89, B 83-86, B- 80-82  
C+ 77-79, C 73-76, C- 70-72

D+ 67-69, D 63-66, D- 60-62  
F below 60

## COURSE SCHEDULE

Our methods in this course include lecture, discussion, and two short in-class exercises followed by independent study and homework, leading to a position paper. On March 4, we will focus our attention on the scientific aspects of the issue, laying a foundation for our understanding of the evidence for evolution. I will provide pizza during our working lunch from 12:30 pm to 1:15 pm. On April 15, we will focus our attention on understanding intelligent design and creationism and some of the arguments in favor of each. We will also apply critical thinking to an analysis of two arguments each side uses. Lunch will be on your own. A detailed agenda for both days is given below.

### March 4, 2006

Time	Topic
8:00 – 8:30	Introductions; Course Overview
8:30 – 9:00	Survey
9:00 – 9:30	Who was Darwin? What were his intellectual contributions?
9:30 – 9:45	Break
9:45 – 10:30	Did we really come from apes – exactly what is Darwin's theory of evolution?
10:30 – 10:45	Break

**March 4, 2006**

<b>Time</b>	<b>Topic</b>
10:45 – 11:45	Geological evidence in support of the theory of evolution
11:45 – 12:30	Lunch
12:30 – 1:30	Paleontology evidence in support of the theory of evolution
1:30 – 2:00	What is a species?
1:30 – 1:45	Break
1:45 – 2:30	Discussion of course assignments and opinion paper
2:30 – 3:30	Darwinism and religion – then and now

**April 15, 2006**

8:00 – 8:30	Administrative Business (recap of previous class, readings, class outcomes)
8:30 – 9:30	What is creationism? Intelligent design?
9:30 – 9:45	Break
9:45 – 10:45	Arguments in support of creationism and intelligent design
10:45 – 11:00	Break
11:00 – 11:45	Opposing viewpoints – practice in critical analysis
11:45 – 12:30	Lunch
12:30 – 1:30	Words matter – what is science? What is its role in the debate?
1:30 – 1:45	Break
1:45 – 2:30	Science standards – practice in critical analysis
2:30 – 2:45	Survey Results
2:45 – 3:00	Course Evaluation

**ASSIGNMENTS**

**NOTE: This section is optional.**

**SPEA 2009 POLICIES  
Syllabus Addendum**