

RELIGION 332: SCIENCE AND RELIGION: SPRING, 2004

INSTRUCTOR: Hoyt Oliver. Office: Humanities 204. Tel. 784-8369. email: oliver@learnlink.emory.edu

TEXTS: Barbour, Religion and Science: Historical and Contemporary Issues

Goodenough, The Sacred Depths of Nature

Newberg, D'Aquili, and Rause, Why God Won't Go Away

Mitchell, ed., The Enlightened Heart (selections to be read at each class session)

COURSE CREDIT: 3 tests and one research paper, each counting 25% of credit

COURSE EXPECTATIONS: All work in this course is under the Honor Code of Oxford College of Emory University. Your signature on test or paper is a pledge that this is your own work, and that you have neither given nor received improper help on the work. All sources of information in papers (not just direct quotations) must be given proper reference citations.

Attendance is expected. Each unexcused absence over 2 will deduct 2 points from final average. Three tardies (coming in after roll is called) count as one absence.

Use the Religion 332 learnlink conference; send information, ask questions, comment, etc.

SCHEDULE OF CLASS SESSIONS: (subject to minor modification, if necessary)

DATE	ASSIGNMENT (to be read before class and studied again after discussion)
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I.	HISTORICAL PERSPECTIVES ON SCIENCE AND RELIGION
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Thu Jan 15	Introductions and film, "Mandelbrot Sets," on chaos and complexity
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Tue Jan 20	Barbour, Part One, Chs. 1-3
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II.	OF MATH AND MYTH: How are science and religion related, how differing?
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Thu Jan 22	Barbour, Part Two, Chs. 4-6
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Tue Jan 27	Handout: Oliver lecture on "Science and Religion, Ohm in Om"
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Thu Jan 29	Film, "The Message of the Myth" – Joseph Campbell and Bill Moyers
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III.	QUARKS AND QUASARS: Cosmology and Quantum Physics
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Tue Feb 3	Barbour, Chs. 7, 8
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Thu Feb 5	Film, "Creation of the Universe"
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Tue Feb 10	Goodenough, Ch. I
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Thu Feb 12	Film, "Soul of the Universe"
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Tue Feb 17	Test # 1
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IV.	GET A LIFE! Biology, evolution, and creation
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Thu Feb 19	Goodenough, Chs. II – VI, XI – XII
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Tue Feb 24	Barbour, Chs. 9 & 10
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Thu Feb 26	Film, "Evolving Soul" Term paper proposals and beginning source list due
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Tue Mar 2	Handouts: Genesis, Tao Te Ching, Upanishads, etc.
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V.	DO YOU MIND? Psychoneurobiology, consciousness, religious experience
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Thu Mar 4	Goodenough, Chs. VII – X
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Tue Mar 9 – Fri Mar 12	: Spring Recess – no classes
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Tue Mar 16	Newberg, Chs. 1,2,3,4
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Thu Mar 18	Newberg, Chs. 5,6,7,8,9
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Tue Mar 23	Film, "Zen," and meditation
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Thu Mar 25	Test # 2
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VI.	HOW IS GOD IN THE PICTURE? Theological thinking
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Tue Mar 30	Barbour, Chs. 11 & 12
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Thu Apr 1	Handouts: "God Is Red," and others
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VII.	SCIENCE AND SPIRIT: HEALING EARTH AND HUMANS
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Tue Apr 6	Film, "Baraka" Term Papers due, at class time (penalty for each day late)
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Thu Apr 8	Handouts or e-reserve: Berry, "Dream of the Earth," etc.
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Tue Apr 13	Handouts or e-reserve: Benson, "Relaxation Response," etc.
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VIII. SHARING OUR WISDOM

Thur Apr 15 class reports
Tue Apr 20 class reports
Thu Apr 22 class reports
Tue Apr 27 class reports

At time scheduled for final exam: Test # 3

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TERM PAPERS IN SCIENCE AND RELIGION

The term paper for Science and Religion is to be a **thoughtful, reflective research paper on a significant issue involving both science and religion.**

The "science" involved may be one we study together, or one we do not cover in class (e.g., chemistry, psychology, mathematics, etc.). On many topics, there may be several science perspectives to consider.

The "religion" involved does not have to be Christianity. Muslim, Jewish, Buddhist, Hindu, Native American, Taoist, Wiccan, and other religious perspectives may be quite relevant to the topic you choose.

One purpose of this assignment is for students to become familiar with the literature in the science-and-religion dialogue. Sources for paper should include **at least two books, three journal articles, and two internet sources.** You will be given a beginning bibliography of relevant books; other book lists may be found on internet sources such as counterbalance.org and the templeton press site. The outstanding journal in science and religion is Zygon. Other good journals are Science and Theology, Science and Spirit, and Spirituality and Health. You will need to find relevant journals for the topic you choose, e.g. for consciousness studies, ecology, astrophysics, etc. Some good internet sites, which have links to other sites, are: www.counterbalance.org; www.metanexus.net; www.science-spirit.org; www.spirituality-health.com.

Proper reference credit must be given in the paper to all sources of information used, not just for direct quotations. You may use any accepted reference style: MLA, footnotes, endnotes, etc., just be consistent.

The paper should be focused on an issue which you discuss, and should show plenty of evidence of your own thinking. It is not a report, so it needs a central theme or hypothesis. Cut-and-paste collages of other people's words and ideas won't get you much credit; you have to work it through and think about it. On the other hand, your own opinions, unsupported by extensive reading in the field and awareness of the discussions that are going on, are not adequate, either.

Some compulsive (or lazy) student is sure to wonder, "How long does this paper have to be?" Sigh! It has to be long enough to cover a significant topic well! Your instructor's opinion is that you can't deal with an appropriate topic in fewer than 12 pages, and the instructor won't read more than 40 pages. So those are the lower and upper limits (double-spaced, typed pages, not counting reference or bibliography pages).

Papers are due at class time on the day indicated in the syllabus. There is a two-point penalty for each day late, including weekends.

Material from papers will be presented in class during the last section of the course. Part of Test # 3 will be over student class reports.

Religion 332: Science and Religion
Oxford College of Emory University

SUGGESTED READINGS

This is a selected reading list. More suggested readings may be found in Notes and Bibliographies in books such as Gilkey, Nature, Reality, & the Sacred and Barbour, Religion and Science and on the Internet sites, <http://www.science-spirit.org>; <http://www.counterbalance.org>; <http://www.metanexus.net>; <http://www.spirituality-health.com>;

Also see these journals: Zygon; science & spirit; Spirituality & Health; Research News in Science and Theology

I. RELIGION AND SCIENCE AS WAYS OF UNDERSTANDING

A) SCIENCE AND THEOLOGY

Barbour, Ian. **Religion and Science: Historical and Contemporary Issues**. HarperSanFrancisco, 1997.

Brown, Warren F., Murphy, Nancy, and Maloney, H. Newton, eds. **Whatever Happened to the Soul? Scientific and Theological Portraits of Human Nature**. Fortress, 1998.

Capra, Fritjof, and Steindl-Rast, David. **Belonging to the Universe: Explorations of the Frontiers of Science and Spirituality**. HarperSanFrancisco, 1991.

Dyson, Freeman. **From Eros to Gaia**. Pantheon, 1992.

_____. **Infinite in All Directions**. Harper & Row, 1988.

Gilkey, Langdon. **Nature, Reality, and the Sacred: The Nexus of Science and Religion**. Fortress, 1993.

Margenau, Henry, and Varghese, Roy A., eds. **Cosmos, Bios, Theos**. Open Court, 1992.

Nasr, Seyyed Hossein. **Knowledge and the Sacred**. SUNY, 1989.

_____. **Religion and the Order of Nature**. Oxford, 1996.

Polkinghorne, John. **Serious Talk: Science and Religion in Dialogue**. Trinity, 1995.

B) HISTORICAL PERSPECTIVES ON SCIENCE AND RELIGION

Lindberg, David, and Numbers, Ronald, eds. **God & Nature: Historical Essays on the Encounter between Christianity and Science**. University of California Press, 1986.

Richardson, W. Mark, and Wildman, Wesley J., eds. **Religion and Science: History, Method, Dialogue**. Routledge, 1996.

Whitehead, Alfred North. **Science and the Modern World**. New American Library, 1925.

C) EPISTEMOLOGY AND SCIENTIFIC UNDERSTANDING

Kuhn, Thomas. **The Structure of Scientific Revolutions**. University of Chicago Press, 1970.

Polanyi, Michael. **Personal Knowledge**. Harper, 1964.

Whitehead, Alfred North. **Process and Reality**. Free Press, 1978 (c. 1929)

D) RELIGIOUS EXPERIENCE AND UNDERSTANDING

Buber, Martin, trans. Walter Kaufmann. **I and Thou**. Scribner's, 1970.

Campbell, Joseph. **The Inner Reaches of Outer Space: Metaphor as Myth and as Religion**. Harper, 1982.

_____, and Bill Moyers. **The Power of Myth**. Anchor, 1991.

Cousineau, Phil. **Soul: An Archaeology**. HarperSanFrancisco, 1994.

Eliade, Mircea. **The Sacred and the Profane**. Harcourt, Brace, 1959.

Hick, John. **God Has Many Names**. Westminster, 1982.

James, William. **The Varieties of Religious Experience**. Random House, 1902.

Niebuhr, Richard. **The Meaning of Revelation**. Macmillan, 1960.

Otto, Rudolph. **The Idea of the Holy**. Oxford, 1958.

Soskice, Janet M. **Metaphor and Religious Language**. Clarendon, 1985.

Tillich, Paul. **Dynamics of Faith**. Harper, 1957.

E) FAR-OUT, PHILOSOPHICAL ATTEMPT AT A BIG PICTURE

Wilbur, Ken. **A Brief History of Everything**. Shambhala, 1996.

II. THEOLOGY: PROPOSALS FOR THEOLOGY THAT WORKS WITH SCIENCE

A) PROCESS, IMAGINATIVE, AND OTHER THEOLOGICAL ATTEMPTS

Cobb, John B., Jr., and Griffin, David Ray. **Process Theology: An Introductory Exposition**. Westminster, 1976

Hefner, Philip. **The Human Factor: Evolution, Culture, and Religion**. Fortress, 1993.

Kaufman, Gordon. **In Face of Mystery**. Harvard University Press, 1993.

McFague, Sallie. **Models of God**. Fortress, 1987.

Peacocke, Arthur. **Theology for a Scientific Age: Being and Becoming – Natural, Divine, and Human.** Fortress, 1993.

Teilhard de Chardin, Pierre. **The Phenomenon of Man.** Harper, 1959.

B) BOOKS WHICH SEE SCIENCE SUPPORTING CHRISTIAN THEOLOGY

Templeton, John Marks. **The Humble Approach: Scientists Discover the Creator.** Continuum, 1996.

_____, and Robert L. Hermann. **The God Who Would Be Known: Revelations of the Divine in Contemporary Science.** Harper & Row, 1989.

_____ and _____. **Is God the Only Reality?** Continuum, 1994.

III. RELIGIOUS, MYSTICAL, AND PHILOSOPHICAL PERSPECTIVES

Abhayananda, Swami. **History of Mysticism: The Unchanging Testament.** ATMA, 1996

Bhagavad- Gita. trans. Barbara Stoler Miller. Bantam, 1986.

The Holy Bible. selections: Genesis 1 -4, Psalms, Isaiah, Job, John, Paul's letters, etc.

Chuang Tzu: Basic Writings. trans. Burton Watson. Columbia University Press, 1964.

Cooper, David A. **God Is a Verb: Kabbalah and the Practice of Mystical Judaism.** Penguin/Putnam, 1997.

Goodman, Felicitas D. **Ecstasy, Ritual, and Alternate Reality: Religion in a Pluralistic World.** Indiana University, 1988.

The Essential Koran. trans. Thomas Cleary. HarperSanFrancisco, 1993.

Suzuki, Shinryu. **Zen Mind, Beginner's Mind.** Weatherhill, 1970.

Tao Te Ching: a New English Version. trans. Stephen Mitchell. HarperPerennial, 1991.

Lao-Tzu: Te Tao Ching. trans. Robert Henricks. Ballantine, 1989.

Underhill, Evelyn. **Mysticism.** Dutton, 1961.

Watts, Alan. **The Way of Zen.** Random House, 1985.

Wilbur, Ken. **Quantum Questions: Mystical Writings of the World's Great Physicists.** Shambhala, 1985.

IV. PHYSICS

Davies, Paul. **God and the New Physics.** Simon & Schuster, 1983.

_____. **The Mind of God.** Simon & Schuster, 1992.

Gell-Mann, Murray. **The Quark and the Jaguar: Adventures in the Simple and the Complex.** W. H. Freeman, 1994.

Polkinghorne, John. **The Faith of a Physicist.** Princeton University Press, 1994.

V. MATHEMATICS, CHAOS, AND ORDER

Gleick, J. **Chaos.** Viking, 1988.

Hofstadter, Douglas R. **Godel, Escher, Bach: An Eternal Golden Braid.** BasicBooks, 1979.

Kosko, Bart. **Fuzzy Thinking: The New Science of Fuzzy Logic.** Hyperion, 1993.

Prigogine, I., and Stengers, I. **Order Out of Chaos.** Bantam, 1984.

Stewart, Ian. **Nature's Numbers: The Unreal Reality of Mathematics.** Harper, 1995.

VI. ASTRONOMY AND COSMOLOGY

Barrow, John D. **The Origin of the Universe.** HarperCollins, 1994.

Hawking, Stephen. **A Brief History of Time.** Bantam, 1988.

Kaku, Michio. **Hyperspace.** Oxford University Press, 1994.

Staguahn, Gerard. **God's Laughter: Man and His Cosmos.** Harper, 1992.

VII. LIFE, BIOLOGY, AND EVOLUTION

Capra, Fritjof. **The Web of Life: A New Scientific Understanding of Living Systems.** Doubleday, 1996.

Crick, Francis. **The Astonishing Hypothesis: The Scientific Search for the Soul.** Scribner's, 1994.

Dawkins, Richard. **River Out of Eden: A Darwinian View of Life.** BasicBooks, Harper, 1995.

Gould, Stephen Jay. **Wonderful Life: The Burgess Shale and the Nature of History.** Norton, 1989.

Kaufman, Stuart. **At Home in the Universe: The Search for the Laws of Self-organization and Complexity.** Oxford, 1995.

Leakey, Richard. **The Origin of Humankind.** BasicBooks, Harper, 1994.

Wilson, E.O. **Sociobiology: The New Synthesis.** Harvard University Press, 1978.

VIII. MIND AND CONSCIOUSNESS

Ashbrook, James B. **Brain, Culture, & the Human Spirit: Essays from an Emergent Evolutionary Perspective.** University Press of America, 1993.

_____, and Carol Rausch Albright. **The Humanizing Brain: Where Religion and Neuroscience Meet.** Pilgrim, 1997.

Austin, James H. **Zen and the Brain: Toward an Understanding of Meditation and Consciousness.** M.I.T. Press, 1998.

Damasio, Antonio R. **Descartes' Error: Emotion, Reason, and the Human Brain.** Putnam, 1994.

deCharms, Christopher. **Two Views of Mind: Abhidharma and Brain Science** SnowLion97.

Dennett, Daniel C. **Kinds of Minds: Toward an Understanding of Consciousness.** Harper,

Gardner, Howard. **Frames of Mind: The Theory of Multiple Intelligences.** Harper, 1985.

Goleman, Daniel. **Emotional Intelligence.** Bantam, 1995.

Hofstadter, Douglas, and Dennett, Daniel C. **The Mind's I: Fantasies and Reflections on Self and Soul.** Bantam, 1982.

Maslow, Abraham. **The Farther Reaches of Human Nature.** Viking, 1972.

_____, **Religions, Values, and Peak Experiences.** Ohio University Press, 1964.

Palmer, Helen, ed. **Inner Knowing.** Tarchner/Putnam, 1998.

IX: ECOLOGY: HEALTHY PLANET, HEALTHY HUMANS

Berry, Thomas: **The Dream of the Earth.** Sierra Club Books, 1988.

Fox, Matthew. **The Coming of the Cosmic Christ.** HarperSanFrancisco, 1988.

_____, and Sheldrake, Rupert. **Natural Grace: Dialogues on Creation, Darkness, and the Soul in Spirituality and Science.** Doubleday, 1996.

Santmire, H. Paul. **The Travail of Nature: The Ambiguous Ecological Promise of Christian Theology.** Fortress, 1995.

SUGGESTIONS ON STUDYING FOR RELIGION COURSES

Hoyt Oliver, Oxford College of Emory University

I've been addicted to education all my life, so what I'm passing on to you all comes mostly out of experience; I'm not bothering to back it up with references to all the brilliant scholarly studies on learning. My grandmother was my first grade teacher; she'd gotten me hooked on reading by the time I was four, and I haven't been able to escape learning since. Anyway, it's fun to follow the Golden Rule of Teaching: "Do Unto Others As Was Done Unto You!" Here's some suggestions that have worked pretty well for me:

ON STUDYING TEXTBOOKS:

1. When you first get a book for a course, take a little time for a preview. Look at the table of contents to see where you're going. Then speed-read through the book, putting your mind in neutral, just flipping the pages as fast as suits you and letting key headings, terms, charts, pictures, etc. register without stopping to think. Depending on the book, the subject matter, and your already-existing familiarity with the field, this could take from three minutes to an hour.
2. Read the portion assigned on the course syllabus BEFORE the date it's to be discussed in class, BUT DON'T UNDERLINE ANYTHING ON FIRST READING. You don't yet know what are the key points.
3. After class discussion, or at a later time, go back for a more intentional study of the material. Underline or highlight, make marginal notes, whatever helps you. BUT DON'T LEAVE OUT STEP 4:
4. WRITE OUT FOR YOURSELF A CHART of the chapter or other unit you're studying. Put it in organized "picture" form, with clear sections, very short phrases summing up content, diagrams that capture the structure. There are several reasons to do this: a) you're having to be intentional, making the effort to identify the structure of the material; b) you're an active learner, using your hands as well as your eyes and ears; c) since you've made the effort to chart, chances are that when you come to be tested on the material if you recall a part of it, the whole picture will come back to you.
5. KEEP A SECTION OF YOUR NOTES FOR KEY TERMS AND CONCEPTS. In religion courses, you're likely to have to learn a large technical vocabulary of philosophical concepts and terms in foreign languages such as Latin, Greek, Hebrew, Sanskrit, and Chinese. Identify these terms, from boldface or italicized words in texts, terms presented in class, glossaries in textbooks, indexes, etc. Try writing out short, brilliant explanations of the terms.

ON STUDYING IN GENERAL, AND ON STUDYING FOR EXAMS:

1. Establish for yourself a disciplined, orderly schedule for studying, so that there's no question that at a certain time on a certain day, you'll be in your study-place doing just studying. (I myself don't follow this advice much.)
2. It's much better to come back to the same material two or three times in short sessions than to go past your attention-endurance-limit in long sessions.
3. KEEP UP WITH YOUR COURSES ALL ALONG, DON'T PUT OFF STUDYING AND TRY TO CRAM BEFORE SCHEDULED EXAMS! (I have little sympathy for students who try to stay up studying the night before a test, and then gripe because the electricity or the fire alarm went off.) It's much more relaxing and stress-reducing to do your studying regularly, review well in advance of a test, then the day or evening before an exam, quit studying and do something relaxing to you. (When I was an Oxford student, I used to camp out in the woods during finals with no textbooks, just coming in for tests.)
4. If you find it helpful to study together with fellow class members, STUDY TOGETHER EARLY, NOT ON THE NIGHT BEFORE A TEST. Save your final review to do on your own. One reason for this is that, if you're studying together and somebody asks about some information, when you give them an answer your mind goes, "Whew! I knew that one!" and LETS GO OF IT! So you need to come back to recharge the brain-cells by yourself after studying together.

Study suggestions for religion courses: page two

5. In Oliver courses, students get their exam papers back. There may be old tests floating around the campus for the course you're taking. I don't mind if you look at old exams, but BEWARE: IN MY RELIGION COURSES, THE QUESTIONS MIGHT BE THE SAME, BUT THE RIGHT ANSWERS COULD CHANGE EVERY SEMESTER!

ON WRITING PAPERS:

1. A major term paper assignment in a course should take weeks, not hours or days, to do. Start thinking and exploring right away, and give it time to emerge. My image of working on a paper or a lecture is a **funnel** – wide at the top, then narrowing down to the spout where it finally pours out. Start big, just exploring, and make lots of notes on scratch paper, and coming back to it often; keep on finding out relevant materials and jotting down ideas that pop into your head, without any clear decision yet on where you'll end up.
2. When you have that large mess of stuff to work with, look at it and see what pattern starts to emerge. Make tentative charts, grouping together related ideas in possible sections. Play with tentative outlines until you see what are the really important points you want to include.
3. There's a difference between **reports** and **term (research) papers**. Reports are like the assignment in Religion 100, where you learn about a religious group, visit a worship service, talk with people, then do a **descriptive report** on what you have learned. In a **research paper**, such as the major assignment for Religion 332 or Religion 200, there needs to be a **central thesis** which is discussed in an **analytical**, not a descriptive, way in the paper. In preparing research papers, you should work hard to focus on the central point you're trying to make. You should be able to state it in a sentence or two, and it should appear clearly in the first paragraph of your paper.
4. **You must give proper reference credit within your papers to every source of information used, in such a form that the reader can see clearly what are your own thoughts and what you have used from other sources.** This means making reference notes for information used indirectly or summarized, not just words quoted verbatim from your sources. You may use any of several standard forms of referencing: parenthetical, footnotes, endnotes, etc, just so your style is consistent. Papers should contain a page of Works Cited with proper bibliographic information. Consult with Library staff about guides to referencing styles.
5. You may receive help from the Writing Center with your written assignments. Use this resource!
6. Sorry, but I will no longer accept papers written in Urdu. I don't know that language very well.
7. Papers are to be turned in on the date specified in syllabus. There will be points-off penalties for every day turned in late (including weekends).

“GOALS” FOR RELIGION COURSES

Hoyt Oliver, Oxford College of Emory University

Our esteemed Dean Greene has pointed out to me that, for purposes of accreditation, documentation, accountability, and other academic measurement procedures, all our course syllabi need to include “goals” for the course. Okay, that’s possible. **But** I must set a context by saying that all the spiritual paths with which I am familiar tell me that when I try to achieve salvation, or moksha, or enlightenment by my own efforts and willpower, I haven’t a hope of success! Youall are most welcome to set for yourselves lesser goals, such as gaining information, getting a grade of “B,” learning religious practices, satisfying a uniform requirement, and the like – and if you do the course work, you’ll probably achieve that kind of goal.

Krishna says it better than I can, speaking to Arjuna in the Bhagavad Gita:

“Foolish men talk of religion
in cheap, sentimental words,
leaning on the scriptures: ‘God
speaks here, and speaks here alone.’

.....

You have a right to your actions,
But never to your actions’ fruits.
Act for the action’s sake.
And do not be attached to inaction.

Self-possessed, act
Without any thought of results,
Open to success or failure.
This equanimity is yoga.

Action is far inferior
To the yoga of insight, Arjuna.
Pitiful are those who, acting,
Are attached to their action’s fruits.

The wise man lets go of all
Results, whether good or bad,
And is focused on the action alone.
Yoga is skill in actions.” (Translation by Stephen Mitchell)

All that said, here are some “results” I hope will happen for you in my religion classes:

- You will be enabled to question the religion of your upbringing, and come back to it with deeper insight.
There is no such thing as second-hand faith.
If I’m uptight about religion it isn’t faith, it’s addiction.
- You will encounter other world-views and religions, and need to ask questions such as,
“Is there any one ‘right’ faith?” “Are all religions talking about the same truth?”
Wer eine religion kennt, kennt keine. (Max Mueller)
If I know only one religion, I know none.
- You will experience the intellectual frustration and delight of having to make connections between religious belief-systems and other word-games such as science, history, art – and arrive at some sense of wholeness/holiness.
Religion is to spirituality as technology is to science
There’s a God-shaped (w)hole in my universe!
- You will learn a huge vocabulary of technical jargon in religions from which you can spout terms to impress your friends and relatives and show them that your tuition may be well-spent:
- *satori—OM—transcendence—immanence—eschatology—prajnaparamita—ontology—incarnation—avatar—theodicy—bhakti—ruach—pneuma—Tao—ad infinitum! And, have fun!*

