

HON200-07--Spring 2011--Pruett¹ **FROM BLACK ELK TO BLACK HOLES: TALES OF A MYSTERIOUS UNIVERSE**

“The real voyage of discovery consists not in seeking new landscapes, but in seeing with new eyes.” **Marcel Proust**

“Sometimes I go about pitying myself, and all the time I am being carried on great winds across the sky.” **Ojibway saying**

“Awe is the beginning of wisdom.” **Rabbi Heschel**

Instructor: Dr. Dave Pruett, Dept. of Mathematics & Statistics, Room 323, 540-568-6227, pruettd@jmu.edu, <http://www.math.jmu.edu/~dpruett>

Office Hours: As posted at the website above (click on [Spring 2011 Schedule](#)) and by appointment. No appointment is necessary during scheduled hours. Outside these hours, the favor of an appointment is requested.

Time and Place: Tuesday-Thursday 12:30-1:45, Burruss 034

Level: Open to all undergraduate Honors students; writing intensive.

Prerequisites: Some university mathematics and science is desirable but not essential.

Primary Texts (to be supplemented by sections of a book I am working on):

1. *Black Elk Speaks* by Black Elk as told through John Neihardt
2. *What is Life? With Mind and Matter and Autobiographical Sketches* by Erwin Schroedinger
3. *The Medium, the Mystic, and the Physicist* by Lawrence LeShan

Related Resources: (Please see attached sheet.)

Grading: 90-100 A, 80-89 B, 70-79 C, 60-69 D, below 60 failing, with appropriate +/-

Weight	Assignment
20 %	Class discussions (10% attendance & participation; 10% leadership)
25 %	Bi-weekly journal (to be collected at mid-term and end-term)
30 %	Two one-hour tests
15 %	Participation in and 2-page summary of Fri./Sat. Dream Circle workshop (or 4-5 page book report, from Related Resources or pre-approved)
10 %	Final written/oral assignment

Honor Policy: JMU students are presumed to uphold the highest standards of integrity. To reinforce these standards, the JMU Honor code will be strictly enforced.

Attendance Policy: Faithful, on-time attendance is *absolutely essential* for individual success and the success of the course. Please, if you are not fully committed to the course, drop it so that others may participate. There's a waiting list.

¹ Dedicated to the memory of John Black Elk, a.k.a. Sun Eagle, Mattaponi wisdomkeeper and cherished friend who passed to the spirit world in November 2003.

Synopsis:

In its oldest and perhaps noblest context, the “university” is where one goes to study the universe and to seek one’s place in it. HON200-07 is wholly dedicated to this noble pursuit.

How do we unravel the mysteries of the universe? In general, understanding comes from two very different wellsprings. According to Henry Reed, author of *The Intuitive Heart*, to learn about a thing we may ask one of two fundamental questions: “How does it work?” or “What’s the story?” Asking the former leads to head knowledge, or simply *knowledge*, which is knowing from without. Asking the latter leads to heart knowledge, or wisdom, knowing from within. The primary tool of knowledge is reason, and the primary tool of wisdom is intuition. We will refer to these differing paths to knowing as *the path of the mind* and *the path of heart*, respectively. *From Black Elk to Black Holes* begins with the simple premise that both types of knowing are vitally important to the individual and to society as a whole, as suggested by Einstein himself, who observed: “*Science without religion is lame; religion without science is blind.*”

Western society, in which we are immersed, strongly favors rational ways of knowing, as evidenced by the premium placed upon science and scientific principles. In the West, we tend to think in terms of scientific “truth” vs. religious “myth.” It is important, however, to recognize that science itself is hardly static, and that its “truth” has been shattered and rewritten numerous times throughout history. Copernicus and Galileo shattered the myth of an earth-centered universe. Einstein’s theory of relativity shattered the myth of absolute space and time. Heisenberg’s uncertainty principle shattered the myth of the objective observer. Hubble shattered the myth of the static universe. And quantum mechanics and chaos theory have shattered the myth of Newtonian determinism. Each scientific quake reverberates with profound psychological dislocations for the human species. Galileo was muzzled by the Church, which held a geocentric universe among its dogma. Einstein, adamant that “*God does not play dice,*” could never embrace the uncertainty principle of quantum mechanics. Such shocks to our perceptions are also, however, opportunities for individual and collective growth.

Although Western society strongly favors rational modes of understanding, reason alone does not necessarily foster feelings of belonging in the universe. In contrast, Eastern and aboriginal cultures tend to favor intuitive modes of understanding, in which kinship and belonging are foundational. As an example, among the Lakota peoples of North America, commonly known as the “Sioux,” is the password, *mitakuye oyasin*, which loosely translates “*all (things are) my relatives.*” A Lakota man refers to his peers as “brother,” “sister,” or “cousin,” and as a sign of respect, addresses all elders as “grandmother” or “grandfather.” To the Lakota, relatedness extends beyond the immediate family to the community, beyond the community to the plants and creatures, and beyond all living things to the realm of the inanimate. In Lakota mythology, the eagle is truly a brother; the earth, our mother; and the sky, our father. This kinship with all creation weaves many threads of the “wakan” (holy) into the fabric of life, threads that bind a Lakota securely to his or her universe.

In HON200-07, we will attempt to explore the universe by seeking balance between the path of the heart and the path of the mind. Primary text (1) was chosen to nurture the former, and two (2) to nurture the latter. Primary text (3) is a crossover book that makes connections between reason and intuition. Much of the energy of the course will be devoted to looking for resonance between rational and intuitive ways of knowing, for where the path of the heart and the path of the mind intersect, there lies the *axis mundi*, the center of the universe. There is the place where human beings best fulfill their destinies as *homo sapiens sapiens*, “doubly wise beings.”

Course Format:

Despite the catchy title, the course is not “fluff.” You will be challenged. For example, an Honors student from the 2000 offering of HON200 wrote on the course evaluation, “*This was the most intellectually challenging and stimulating class I have taken in 4 years at JMU. This went outside the bounds of memorization and traditional learning; it entered the realm of intense thought and reflection. The ideas we covered forced me to expand my mind and examine what I know, who I am, and my place in the universe.*” As such, the course will be both rigorous and writing intensive. Class meetings will involve a mixed bag of activities in a variety of formats. Approximately half of all class periods will be devoted to lectures on background material, to mathematical derivations, to illustrations of physical concepts (for example, the Lorentz transformation of special relativity), and/or to biographical sketches. Students of average scientific and mathematical abilities should not be frightened away by the technical aspects of the course, as the focus of such material is primarily on its philosophical implications. At least five class periods will be devoted to student-led discussions, where readings will be discussed in depth in seminar format. Teams of students will be asked to assume leadership roles in guiding such discussions; each student is required to participate in leading one discussion. Of the remaining class periods, at least three will be devoted to collectively reading stories and poems, relevant videos will be shown in at least two, and hopefully there will be time for one or more experiential exercises. Students will be required to keep journals in which they are to respond to and process the reading assignments and discussions following each class period. *The journal is perhaps the most important element of the course.* Students are also required to participate in a Dream Circle workshop to be held on a consecutive Friday evening and Saturday morning (see the Anticipated Schedule for the dates). The Dream Circle, an enjoyable and potentially transformative experience (in which the instructor has participated four times), was developed over a number of years by transpersonal psychologist, Dr. Henry Reed, author of *The Intuitive Heart*. At least part of the final exam will consist of a take-home essay designed to help students assimilate and unify the many facets of the course into a personal “myth of meaning.”

Course Philosophy:

The course will be integrative in nature; that is, we will seek to identify common threads of diverse experiences and seemingly disparate worldviews. For the course to be successful, students should bring commitment (to their own growth and to their fellow students), open minds, open hearts, willingness to ask probing questions, eagerness to dig deeply for answers, and courage to live with ambiguity when answers are not readily forthcoming. The instructor will be making this journey along with his students. Predecessors of this course have touched the lives of many who have participated, including the instructor's, but it is unlikely that anyone will receive more from the course than she/he invests in it.

Here is a *provisional schedule*. The *actual schedule* will be updated weekly or bi-weekly on Blackboard. Always refer to the *actual schedule* for class activities and assignments.

Provisional Schedule

HON200--Black Elk to Black Holes--Spring 2011--Pruett Provisional Class Schedule

DAY		TOPICS		
Week 1				
01	Jan.	11	Tu	Introduction
02	Jan.	13	Th	Of Myth and Meaning
Week 2				
03	Jan.	18	Tu	White Buffalo Woman and Other Creation Myths
04	Jan.	20	Th	The Sacred Hoop Broken: Wounded Knee
Week 3				
05	Jan.	25	Tu	The Wisdomkeepers , Meetings with Native American Elders
06	Jan.	27	Th	"The First Storytellers," Part III in Joseph Campbell's <i>The Power of Myth</i>
Week 4				
07	Feb.	01	Tu	<i>Black Elk Speaks</i> , a student-led discussion
08	Feb.	03	Th	The Universe of Descartes and Newton : Reductionism and Determinism
Week 5				
09	Feb.	08	Tu	Special Relativity I : An "Immensely Simple Question"
10	Feb.	10	Th	Special Relativity II : A Wrinkle in Time
Week 6				
---	Feb.	15	Tu	ASSESSMENT DAY (NO CLASS)
11	Feb.	17	Th	The Jewish "Saint:" Einstein
Week 7				
12	Feb.	22	Tu	General Relativity I : Einstein's Happiest Thought
13	Feb.	24	Th	General Relativity II : "Lights all Askew " and Cosmological Implications
Week 8				
14	Mar.	01	Tu	" The Great Initiation ," by Richard Tarnas, a student-led discussion
15	Mar.	03	Th	Test I: Black Elk Speaks and Relativity
SPRING BREAK March 7-11				
Week 9				
16	Mar.	15	Tu	TBD
17	Mar.	17	Th	<i>Stephen Hawking's Universe</i> (VIDEO): "The Big Bang"
Week 10				
18	Mar.	22	Tu	The Quantum Universe I : Uncertainty
19	Mar.	24	Th	The Quantum Universe II : Wave-Particle Duality
Week 11				
20	Mar.	29	Tu	The Quantum Universe III : Schrodinger's Cat and Parallel Universes
21	Mar.	31	Th	News of the Universe : <i>Poems of Twofold Consciousness</i>
22	Apr.	01-02	F-S	ACTIVITY : Dr. Henry Reed's Dream Helper Ceremony
Week 12				
23	Apr.	05	Tu	Entropy I: The Arrow of Time
24	Apr.	07	Th	Entropy II: A Quiver of Arrows
Week 13				
25	Apr.	12	Tu	Schrodinger's <i>What is Life?</i> a student-led discussion
26	Apr.	14	Th	Schrodinger's <i>Mind and Matter</i> a group discussion
Week 14				
27	Apr.	19	Tu	Post-Processing the Dream Circle: What's Going On?
28	Apr.	21	Th	Test II: Quantum Theory, Entropy, and Cosmology
Week 15				
29	Apr.	26	Tu	<i>The Medium, The Mystic, and the Physicist</i> , a student-led discussion
30	Apr.	28	Th	Restoring the Sacred Hoop (Journal due following entry)
Week 16				
31	May	03	Tu	FINAL EXAM (10:30-12:30am) Sharing of personal myths within the Sacred Hoop