



NOTRE DAME SEMINARY

GRADUATE SCHOOL OF THEOLOGY

Course Syllabus for **PHI 205/508** **THE EMERGENCE OF THE IMAGE: HUMAN EVOLUTION FROM SCIENTIFIC, PHILOSOPHICAL AND THEOLOGICAL PERSPECTIVES**

Instructors: **Christopher T. Baglow, Ph.D./Cory J. Hayes Ph.D.** Semester: **Fall 2015**
Email: **cbaglow@nds.edu/chayes@sjasc.edu** Time: **TTH 1:30-2:45 PM**
Office Hours: **SJ 110/MWF 1:00-4:00 PM** Classroom: **TBD**
Phone: **Baglow: 985-373-3053/Hayes: 985-778-8115**

Guest Lecturers:

Donald R. Frohlich, Ph.D., Professor, Biology, Fellow, Center for Faith and Science, University of St. Thomas, Houston, TX (Guest lecturer on evolutionary theory.)

Rev. Nicanor Austriaco, O.P., Ph.D., S.T.D., Associate Professor, Biology, University of Notre Dame, South Bend, IN (Guest lecturer on the genetics of human evolution.)

Matthew J. Rossano, Ph.D., Professor, Psychology, Southeastern Louisiana University, Hammond, LA (Guest lecturer on the “Human Revolution”)

I. Catalog Description

This course treats the science of evolutionary theory both in its essential outlines and in regard to the emergence of the human species. Topics to be considered will include: the foundations of evolutionary theory, the role of genetics, the crucial function the theory plays across all of the biological sciences and scientific discoveries regarding the evolution and origins of modern humans. Students will also be guided in competently reflecting upon the science of human evolution philosophically and theologically for the sake of engaging an increasingly scientifically literate culture. The harmony between modern science and the Church’s theology of the human person as the image of God will be given special attention. The course is cross-listed as a DT 511 Dogmatic Theology Topics course for M.Div. and M.A. students.

II. Full Course Description

This course brings into dialogue four approaches to human origins for the sake of understanding what it means to be human. To understand human emergence, biological evolution, paleoanthropology, philosophical anthropology and theological anthropology all have a part to play, because understanding is achieved only when many points-of-view are unified in a way that respects the competence and autonomy of each.

The first part of the course engages the long process of cosmic and biological evolution that led to the bodily emergence of *Homo sapiens*. Seminarians are introduced to a

narrative of the history of life, with attention to how Darwin's theory of Evolution by Natural Selection was combined with evidence from Mendelian genetics, during the Modern Synthesis (1900-1935), to yield a testable and robust body of theory (Neo-Darwinism). Attention will also be paid to recent developments that extend Darwin's original hypotheses but, are based in non-Mendelian modes of inheritance or mechanisms that augment natural selection (e.g. evolutionary development, epigenetic phenomena).

Tracing the evolutionary process naturally leads to the elaboration of the criteria that mark the advent of our species through the study of the human fossil record (paleoanthropology) and human artifacts (archaeology). The second part of the course begins with the earliest known hominins and examines the 7 million years of hominin evolution. Special attention is given to the genetic and morphological factors involved in increased complexity and sophistication that led to modern humans, and the corresponding artifact record.

Paleoanthropologists often refer to the emergence of *Homo sapiens* as "the Human Revolution," and in order to justify such an assertion, philosophical analysis of distinctively human qualities and activities is required. The third part of the course investigates these qualities, and demonstrates that human emergence is not susceptible to a purely materialistic, mechanistic explanation. The status of the human person as rational animal raises the question of the human soul and the capacities of intellect and will. A fuller model of human emergence which does justice to the evolutionary data as well as human uniqueness is developed in a way that avoids both reductionism and supernaturalism.

In the words of John Paul II, "theology will have to call on the findings of science to one degree or another as it pursues its primary concern for the human person." In the final part of the course, seminarians are engaged in theological reflection on the findings of the former approaches in the light of divine revelation in order to illuminate the doctrine of the human person as the embodied image of God. The harmony between modern science and the Church's theology of the human person as the image of God is emphasized. Special topics considered are a proper understanding of divine providence in the light of evolution, human beings as the liturgical consummation of cosmic evolution and the Resurrection of Christ as "a radical 'evolutionary leap', in which a new dimension of [human] life emerges" (Benedict XVI).

III. Course Rationale/Pastoral Implications

According to John Paul II, bringing science and religion into dialogue is not simply an interesting interdisciplinary exercise; it is, rather, an urgent pastoral necessity. In his 1988 Letter to the Director of the Vatican Observatory the pope put this dialogue on par with other dialogues undertaken by the Church: with separated Christians, the great world religions, and between Eastern and Western Christianity. "We must ask ourselves whether both science and religion will contribute to the integration of human culture or to its fragmentation. It is a single choice and it confronts us all... If they are to grow and mature, peoples cannot continue to live in separate compartments, pursuing totally divergent interests from which they evaluate and judge their world." In his estimation, the

dialogue between science and religion is for Catholics part of the fulfillment of the mission of Christ, quoting St. Paul, “For God was in Christ, reconciling the world to himself.” (2 Cor 5:19), and concluding, “Our very nature as Church entails this commitment to unity.”

Two recent studies indicate that the Church’s pastors have not been effective in communicating and leading this mission. In her 2015 study “Catholicism and Science,” sociologist Elaine Ecklund notes that 62% of high-attendance Catholics think that the Bible and science can be in conflict, indicating a lack of awareness that, in the words of John Paul II, “The theological teaching of the Bible, like the doctrine of the Church which makes this explicit, does not seek so much to teach us the how of things, as rather the why of things.” This is especially true of younger Catholics; according to the National Study of Youth and Religion, 72% of 18-29 year-old Catholics see science and religion in conflict, and 78% of 18-29 year-old lapsed Catholics cite the “conflict” of science and religion to account for their departure, despite the teaching of the *Youth Catechism* that “there is no insoluble contradiction between faith and science” (#23). This data suggests that in order to effectively catechize and evangelize this and subsequent generations, Catholic priests must be prepared to address scientific topics in a way that wedds faith and reason.

Of all the places where science and Christian doctrine touch each other, this need is most pressing in regard to the nature and dignity of the human person, a question that becomes unavoidable in regard to the evolutionary history of humanity. Genomic mapping, new fossil and artifact discoveries, more sophisticated models of evolutionary development have greatly increased our scientific knowledge of our biological heritage. At times, this picture is clothed in unwarranted reductionist language that claims that humans are no more than gene replicating machines or neurologically sophisticated primates. The great potential of these advances to illuminate and deepen our understanding of the human being as rational animal and embodied image of God requires a sustained encounter between science, philosophy and theology that help future pastors to see how to bring these sources of knowledge into a unified vision for the faithful.

IV. Student Learning Objectives

Upon completion of this course, the seminarian will be able to:

1. **Demonstrate** a working understanding of the core aspects of evolutionary theory as an organizing framework for all of the life sciences, and **apply** it to a scientific narrative of the history of life and the emergence of the human species.
2. **Analyze** the philosophical arguments on which the notion of the human person as uniquely rational animal are based and **synthesize** these with a modern scientific account of the human being as the product of natural evolutionary processes.
3. **Analyze** and **interpret** the biblical creation accounts and the doctrines of divine providence, the human person as image of God and the Resurrection of Christ as the fulfillment of human history in the light of the scientific and philosophical perspectives on human origins and the human person.

4. **Differentiate** and **compare** the methods, tools, and boundaries of scientific, philosophical, and theological inquiry regarding the emergence of the human being as complementary ways of attaining insight into human origins and the human person.

V. Required Texts/Selections

- Ayala, Francisco J. *Darwin's Gift to Science and Religion*. Washington, D.C.: Joseph Henry Press, 2007.
- Purcell, Brendan M. *From Big Bang to Big Mystery: Human Origins in the Light of Creation and Evolution*. Hyde Park: New City, 2012.
- Tattersall, Ian. *Masters of the Planet: The Search for Our Human Origins*. New York: Palgrave Macmillan, 2012.
- Życiński, Józef. *God and Evolution: Fundamental Questions of Christian Evolutionism*. Washington, D.C.: CUA, 2006.
- SELECTIONS IN GOOGLE CLASSROOM

VI. Bibliography of Course Resources (texts are listed in the order of the parts of the course):

I. Cosmic and Biological Evolution

- Ayala, Francisco J. *Darwin's Gift to Science and Religion*. Washington, D.C.: Joseph Henry Press, 2007.
- Baum, David A., Stacey DeWitt Smith and Samuel S. S. Donovan. "Evolution: The Tree-Thinking Challenge." *Science* 310, no. 979 (2005): 979-980.
- Caldwell, Roy, et al. "Understanding Evolution: Your One-Step Source for Information on Evolution." University of California Museum of Paleontology, <http://www.evolution.berkeley.edu/evolibrary/about.php>.
- Coyne, Jerry A. *Why Evolution is True*. New York: Penguin Group, 2010.
- Gould, Stephen Jay and Elisabeth Vrba. "Exaptation—a missing term in the science of form." *Paleobiology* 8 (1982): 4-15.
- Jacob, François. "Evolution and Tinkering." *Science: New Series* 196, no. 4295 (Jun. 10, 1977): 1161-1166.
- Morris, Simon Conway. *The Runes of Evolution: How the Universe became Self-Aware*. West Conshohocken, PA: Templeton Press, 2015.
- Tattersall, Ian. *Paleontology: A Brief History of Life*. Templeton Science and Religion Series. West Conshohocken, PA: Templeton Press, 2010.

II. Human Evolution and Origins

- Coppens, Yves. "Hominid Evolution and the Emergence of the Genus *Homo*." *Neurosciences and the Human Person: New Perspectives on Human Activities. Scripta Varia* 121 (2013), www.casinapioiv.va/content/dam/accademia/pdf/sv121/sv121-coppens.pdf.
- Mellars, P. A. and C. Stringer, eds. *The Human Revolution: Behavioural and Biological Perspectives in the Origins of Modern Humans*. Edinburgh: Edinburgh University Press, 1989.
- Mithen, Steven. *The Prehistory of the Mind: The Cognitive Origins of Art, Religion and Science*. New York: Thames and Hudson, 1999.

- Rossano, Matt J. *Supernatural selection: How Religion Evolved*. New York: Oxford University Press, 2010.
- Somel, Mehmet, Xiling Liu and Philipp Khaitovich. "Human brain evolution: transcripts, metabolites and their regulators." *Nature Reviews Neuroscience* 14 (2013): 112-127.
- Tattersall, Ian. *Masters of the Planet: The Search for Our Human Origins*. New York: Palgrave Macmillan, 2012.
- Wade, Nicholas. *Before the Dawn: Recovering the Lost History of Our Ancestors*. New York: Penguin Press, 2006.
- Wrangham, Richard. *Catching Fire: How Cooking Made Us Human*. New York: Basic Books, 2010.

III. Philosophical Anthropology and Human Origins

- Adler, Mortimer. *The Difference of Man and the Difference It Makes*. 1967. Reprint, New York: Fordham Press, 1993.
- De Koninck, Charles. "The Cosmos." In *The Writings of Charles De Koninck*, Vol. I, edited and translated by Ralph McNerny, 235-354. Notre Dame, IN: University of Notre Dame Press, 2008.
- Hart, David Bentley. *The Experience of God: Being, Consciousness, Bliss*. New Haven, CT, Yale University Press, 2013.
- Jonas, Hans. *The Phenomenon of Life: Toward a Philosophical Biology*. 1966. Reprint, Evanston, IL: Northwestern University Press, 2001.
- Klima, Gyula, "Aquinas on the Materiality of the Human Soul and the Immateriality of the Human Intellect." *Philosophical Investigations* 32:2 (2009): 163-182.
- Nagel, Thomas. *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False*. New York: Oxford University Press, 2012.
- Purcell, Brendan M. *From Big Bang to Big Mystery: Human Origins in the Light of Creation and Evolution*. Hyde Park: New City, 2012.
- Sloan, Philip R. "Being Human and Christian in a Post-Darwinian World." *Logos* 15:1 (2012): 150-177.

IV. Theological Anthropology and Human Origins

- Austriaco, Nicanor. "In Defense of Double Agency in Evolution: A Response to Five Modern Critics." *Angelicum* 80 (2003): 947-966.
- Clifford, Richard J. "The Hebrew Scriptures and the Theology of Creation." *Theological Studies* 46 (1985), 507-523.
- International Theological Commission. *Communion and Stewardship: Human Persons Created in the Image of God*.
http://www.vatican.va/roman_curia/congregations/cfaith/cti_documents/rc_con_cfaith_doc_20040723_communion-stewardship_en.html.
- Ratzinger, Joseph. *In the Beginning: A Catholic Understanding of the Story of Creation and the Fall*. Ressourcement: Retrieval and Renewal in Catholic Theology. Grand Rapids: Eerdmans, 1995.
- _____. *Introduction to Christianity*. 2nd ed. San Francisco: Ignatius Press, 2010.

Verschuuren, Gerard M. *God and Evolution? Science Meets Faith*. Boston: Pauline Books, 2012.

Życiński, Józef. *God and Evolution: Fundamental Questions of Christian Evolutionism*. Washington, D.C.: CUA, 2006.

VII. Lecture, Presentation, and Reading Schedule

Week 1	Jan. 10 Jan. 12	PART I: Guest Lecturer (via Skype): Dr. Don Frohlich on Basic Terms/Concepts Guest Lecturer (via Skype) : Dr. Don Frohlich on Evolutionary Theory
Week 2	Jan. 17 Jan. 19	Evolutionary Theory II History of Life I
Week 3	Jan. 24 Jan. 26	History of Life II Evolution as Explanatory Theory of History of Life
Week 4	Jan. 31 Feb. 2	Guest Lecturer: Dr. Don Frohlich on Evolution as Explanatory Theory of History of Life PART II: Human Evolution in the Framework of Evolutionary Theory
Week 5	Feb. 7 Feb. 9	Hominid Sequence Paleontological Evidence
Week 6	Feb. 14 Feb. 16	Guest Lecturer: Fr. Nicanor Austriaco on the Genetics of Human Origins The “Human Revolution”: What Makes Us <i>Homo sapiens sapiens</i> .
Week 7	Feb. 21 Feb. 23	Guest Lecturer: Dr. Matt Rossano on Psychology and the “Human Revolution” Film: “The Cave of Forgotten Dreams”
Week 8	Feb. 28 Mar. 1	Mardi Gras Day (No Classes) MID TERM EXAM
Week 9	Mar. 6 Mar. 8	PART III: Philosophy of Nature, Philosophical Psychology and Empirical Science Philosophy of Nature and Causality
Week 10	Mar. 13 Mar. 15	What is a Soul? (Man and the Animals I) What is a Body? (Man and the Animals II)
Week 11	Mar. 21 Mar. 23	Emergent Probability Evolution and Thomistic Realism
Week 12	Mar. 28 Mar. 30	Consciousness, Intentionality and Evolution PART IV: Theology and It’s Relation to Science and Philosophy
Week 13	Apr. 4 Apr. 6	Biblical Inspiration/Inerrancy and Interpreting Genesis The Doctrine of the Human Person as <i>Imago Dei</i> I
Week 14	Apr. 11 Apr. 13	Holy Week (No Classes) Holy Thursday (No Classes)
Week 15	Apr. 18 Apr. 20	Easter Tuesday (No Classes) Divine Providence: Causality, Contingency and Necessity
Week 16	Apr. 25 Apr. 27	The Human Person as Microcosm (<i>Imago Dei</i> II) The Human Person as <i>Raison d’être</i> of the Cosmos
Week 17	May 2 May 4	Evolution, Resurrection, and Eschatology Final Review
Exam Week	TBD	FINAL EXAM

VIII. Course Requirements and Methods of Assessment

Examinations: Each seminarian will take a midterm and final exam in the standard exam format, i.e., objective questions such as matching and true/false, and subjective questions such as short answer and long essays. These exams will test the seminarian's knowledge and comprehension of core vocabulary, concepts, and the application of those concepts. The mid-term exam consists of the material covered in the science portion of the course, viz., evolutionary theory in general and human evolution/origins. The final exam consists of the material covered in Parts III-IV of the course, viz., philosophical and theological anthropology and the harmony of faith and science. While the final exam is not, strictly speaking, comprehensive, it will evaluate the seminarian on his comprehension and application of evolutionary theory as it relates to philosophical and theological issues and his ability to distinguish between scientific, philosophical and theological perspectives on human evolution. Each of these exams will represent 30% of the seminarian's final grade respectively.

Capstone Presentation Project:

Project Description:

The students will be assigned into working groups of 2 by the instructor (in case of an odd numbered enrollment there may be a single group of 3). Each group will be responsible for producing a series of 2, 45 minute presentations intended for a parish setting on basic scientific literacy concerning human evolution (Presentation 1) and how that perspective is compatible with and complementary to a Catholic philosophico-theological view of the human person as *imago Dei* (Presentation 2). The project will consist of full presentation scripts (i.e. whole lectures, not outlines) as well as either physical or electronic audio/visual components that will accompany the lectures as enhancements.

The lecture component of each presentation must be 8-10 double-spaced pages (Times New Roman, 12 pt. font, not including endnotes and bibliography). Coupled with the audio/visual component (see below), reading 8-10 double-spaced pages at a good public reading pace should occupy about 45 minutes.

The required audio/visual component for each presentation may consist of physical pictures, diagrams, etc. and/or electronic slides and other visuals delivered by way of a program like PowerPoint or Keynote. The audio/visual requirement is of crucial importance in the seminarian's presentation of the scientific evidence provided by paleoanthropology, genetics, and archaeology.

This project will measure the seminarian's ability to integrate the course content into an effective and coherent teaching tool for his present pastoral assignments and future priestly ministry. A rubric will be used to evaluate the presentation in the following areas: focus and organization, support and elaboration, accuracy of information, visual style and oral conventions.

The final component of the project will be a 500-word outreach strategy from each seminarian identifying 2-3 potential opportunities for delivering the presentations in his home diocese within twelve months of course completion, including names and contact information of appropriate pastors, principals and/or diocesan officials. After the course, the instructors will contact the vocation directors of all seminarians who successfully complete the course informing them of the seminarian's project and inviting them to promote the presentations.

Each presentation will be 20% of the seminarian's final grade so that the project, as a whole, will account for 40% of a seminarian's final grade.

IX. Attendance Policy

Notre Dame Seminary observes the following policy regarding class attendance: Regular class attendance is expected and required of all students who intend to receive credit for course work in the graduate school. Inevitably, extraordinary circumstances will arise that make class attendance impossible on occasion; therefore, a formula for determining regular attendance has been established as policy for the convenience of both seminarians and instructors. A student is permitted to be absent from class no more than twice the number of times the class meets per week. (You are considered absent if you are not present when attendance is taken). Thus, if a student is absent for seven classes from a course that meets three times a week, the student is in violation of school policy in this regard. The normal penalty for such a violation is the grade FA (failure due to absence).

The number of absences includes those due to illness, late registration, or any other cause. Absence from class immediately before or after holidays and free weekends is considered a double cut. Only the Academic Dean may waive penalties for absence. In absences due to illness, you must inform the instructor and your formation advisor prior to the class.

X. Academic Policies

Academic Integrity Policy

Students of Notre Dame Seminary are required to commit themselves to responsible scholarship in every aspect of priestly formation, including academics. It is expected that every student works and studies to the best of his ability for every course.

Students also accept responsibilities and obligations as students, which include commitments to honesty, disciplined study, and integrity in their academic work. They will be expected to respect academic scholarship by giving proper credit to other people's work, while at the same time preparing well for assigned materials and examinations in such a way that their academic integrity will never be questioned.

Plagiarism Policy

NDS clearly communicates the Plagiarism Policy to new students at orientation at the beginning of each academic year. At this time all students will be asked to acknowledge their understanding of this policy by signing an Academic Integrity Policy Form. A copy of this form will be kept in the student's folder in the Registrar's office. In addition to its

introduction at orientation, this Plagiarism Policy is included on all course syllabi to serve as a reminder and resource for students. The Academic Dean will keep a log of all suspected or verified instances of plagiarism.

Plagiarism is considered not only an act of dishonesty but also a violation of academic integrity. NDS defines plagiarism to include the following actions by students:

- Submitting an essay (or other written work) written in whole or in part by another student;
- Quoting or paraphrasing an essay (or other written work), in whole or in part, that was taken from a text or downloaded from the Internet, without acknowledging the original source;
- Restating a clever phrase *verbatim* from another writer without acknowledging the source;
- Paraphrasing part of another writer's work without acknowledging the source with a citation;
- Reproducing the substance of another writer's argument without acknowledging the source;
- Taking work originally done for one instructor's assignment and re-submit it to another teacher;
- Cheating on tests or quizzes through the use of crib sheets, hidden notes, viewing another student's paper, revealing the answers on my own paper to another student, through verbal or textual communication, sign language, or other means of storing and communicating information, including electronic devices, recording devices, cellular telephones, headsets, and portable computers; and,
- Copying another student's homework and submitting the work as if it were the product of their own labor.

If a professor determines that an act of plagiarism has occurred, the consequence will be that a failing grade/zero will be given for that assignment.

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The number of absences includes those due to illness, late registration, or any other cause. Absence from class immediately before or after holidays and free weekends is considered a double cut. Only the Academic Dean may waive penalties for absence. In

absences due to illness, you must inform the instructor and your formation advisor prior to the class.

XI. Disability Accommodation Policy

In accordance with the Americans with Disabilities Act, Notre Dame Seminary provides disability accommodations for students with identified and/or diagnosed disabilities. Students with disabilities need not inform their instructors about the nature of their disabilities, but they are responsible for contacting and providing appropriate documentation to the Academic Resources Center. Requests for accommodations must be made each semester for which the student wishes to receive service; the Academic Resources Center will then distribute a letter of accommodation to the faculty. It is the student's responsibility to meet with each faculty member to discuss how his/her accommodation(s) may be met within each course. Notre Dame Seminary will attempt to meet reasonable accommodations requested. A reasonable accommodation is a modification to a non-essential aspect of a course, program, or facility which does not pose an undue burden and which enables a qualified student with a disability to have adequate opportunity to participate and to demonstrate his or her ability. Such accommodations are determined on an individual basis depending upon the nature and extent of the disability. For more information, contact the Academic Dean's Office.

XII. Extension Policy

Due-Date extensions will only be given in case of serious emergencies. The student must seek the extension as soon as possible and with the written recommendation of his formation director.

XIII. Audit Policy

All students auditing must follow the attendance policy, come to class regularly unless excused and do all assigned readings. Failure to do so will require withdrawal from the course.

XIV. Grading Scale

Letter Grade Number	Quality Points	Grade Scale
A	4.00	100 – 94
A-	3.70	93 – 90
B+	3.30	89 – 88
B	3.00	87 – 84
B-	2.70	83 – 80
C+	2.30	79 – 78
C	2.00	77 – 74
C-	1.70	73 – 70

D+	1.30	69 – 68
D	1.00	67 – 64
D-	.70	63 – 60
F	0.00	59 – 0

See Academic Catalog for Grading Scale Narrative.

XIV. Syllabus Contract

This syllabus *obliges* the student to adhere to all policy requirements and to fulfill all academic expectations herein stated; it also *entitles* the student to a reasonable opportunity to learn the material specified in the course description in order to accomplish for himself the educational goals of the course. In order to optimize the learning process the course instructor reserves the right to make reasonable adjustments to the syllabus requirements during the semester, in response to unforeseen developments or circumstances. All adjustments made must be communicated clearly to students.