

Christianity and History of Science Instructor: Samuel Cheon

Course Theme: CREATION IN THE BIBLE, THEOLOGY AND SCIENCE: A HISTORICAL AND INTER-DIALOGICAL PERSPECTIVE

Institution: Hannam University, Graduate School of Theological Interdisciplinary Studies, Taejeon, South Korea

COURSE DESCRIPTION

1. FORMATION

This course is offered in the fall 2002 semester by Dr. Samuel Cheon, Professor of Old Testament at Graduate School of Theological Interdisciplinary Studies, Hannam University, with the assistance of guest lecturers. The course is offered for students in the Th.M. program and entitled as Christianity and History of Science according to the school's academic plan. The course meets every Thursday in two-hour sessions, for sixteen weeks. Each class consists of presentation, lecture and discussion.

Guest lecturers include Dr. Dekryong Kim, Professor of Philosophy; Dr. Jongyong Lee, Professor of Physics, at Hannam University; Dr. Jeongkeun Ahn, Professor of Molecular Biology and Genetics at Chungnam University. Selection of guest lectures is ongoing, and one or two more may be added.

2. GOALS

The goals of the course will be for students

(1) to articulate definitions for both science and theology, considering their respective tasks and the inherent limits of their methods and objectives;

(2) to arrive at a critical historical understanding of the interaction between Christian theology and natural science, especially biblical interpretations and scientific views, minimizing their prejudice of each of the two fields;

(3) to develop their historical, hermeneutical and theological horizon of creation, relating to the contemporary natural sciences;

(4) to relate their understanding of theology and science to their ministerial context and preaching, especially having a new interpretive perspective of biblical creation stories;

(5) to develop some basic skills for interdisciplinary research of science and theology.

3. ASSIGNMENTS AND GRADING

(1) Readings as assigned and participation in the class discussion (30%).

(2) Presentation of at least one of the common readings, reflecting their faith and ministerial experience (30%).

(3) A term paper on some aspect of Christian doctrine in relation to creation theology, with attention to how the doctrine is challenged and might be revised in light of recent developments in the natural sciences. Students should consult to instructor about their topic until the mid of the semester. 15 pages double-spaced. 10 points. The paper due date is at the end of the term. All students should briefly present it in the last class (40%).

4. COMMON READINGS

Barbour, Ian G., *Religion and Science: Historical and Contemporary Issues. A Revised and Expanded Edition of Religion in an Age of Science* (San Francisco: Harper San Francisco, 1997), (Korean translation forthcoming).

Barr, James, *The Concept of Biblical Theology: An Old Testament Perspective* (Minneapolis, MN: Fortress, 1999).

Brooke, John Hedley, *Science and Religion: Some Historical Perspectives* (Cambridge History of Science; Cambridge: Cambridge University Press, 1991).

Haught, John F., *Science and Religion: From Conflict to Conversation* (New York: Paulist, 1995).

Hayes, Zachary, *The Gift of Being: A Theology of Creation* (New Theology Studies, 10; Collegeville, MN: Liturgical, 2001).

McGrath, Alister E., *Science and Religion: An Introduction* (Malden, MA; Blackwell, 1999), (Korean translation forthcoming).

Peters, Ted, ed., *Genetics: Issues of Social Justice* (Cleveland: Pilgrim, 1998).

Polkinghorne, John, *Science and Theology: An Introduction* (Minneapolis, MN; Fortress, 1998).

5. RECOMMENDED READINGS

Barbour, Ian G., *Ethics in an Age of Technology* (San Francisco: Harper San Francisco, 1993).

Cheon, Samuel, *A Commentary on the Book of Genesis* (Seoul: Christian Literature Society of Korea, 2001) (Korean).

_____, "Wisdom Literature and Creation Faith in the Old Testament," *Christian Culture Studies* 2 (1997), pp.305-19 (Korean).

_____, "Religious Ideas of Philo of Alexandria," *Korea Journal of Christian Theology* (2002, forthcoming) (Korean).

_____, "Religious Ideas in the Qumran Community," *Korea Journal of Christian Theology* 20 (2001/4), pp.51-74 (Korean).

Gruse, Robert K., *The Old Testament and Process Theology* (St. Louis: Chalice, 2000).

Herrmann, Robert L., ed., *God, Science and Humility: Ten Scientists Consider Humility Theology* (Philadelphia: Templeton Foundation Press, 2000).

Kim, Sangil, "Foundational Cosmology and Anti-foundational Cosmology: Comparison between Creation Theory and Big Bang Theory," *Christian Thought* 473 (1998/5), 130-46 (Korean).

Lindberg, David C. and Ronald L. Numbers, *God and Nature: Historical*

Essays on the Encounter between Christianity and Science (Berkeley: University of California, 1986); Korean Translation by Jungbae Lee and Woosuk Park (Seoul: Ewha Womans University Press, 1998).

McGrath, Alister E., *The Foundations of Dialogue in Science and Religion* (Malden, MA: Blackwell, 1998).

Peters, Ted, ed., *Science and Theology: The New Consonance* (Boulder, CO: Westview, 1998).

_____, *Playing God?: Genetic Determinism and Human Freedom* (New York: Routledge, 1997).

Russell, Robert John, William R. Stoeger, S.J. and George V. Coyne, S.J., eds., *Physics, Philosophy, and Theology: A Common Quest for Understanding* (Vatican: Vatican Observatory, 1997).

COURSE SCHEDULE

I. INTRODUCTION

Week 1: Introduction of the course

- i. Introduction to members of the seminar
- ii. Overview of the course: aims and procedures; readings; presentations; assignments; term papers
- iii. Watching "Faith and Reason" in a video tape
- iv. Discussions: What do we currently think science? Religion? Faith? How are they related?

II. MODELS FOR UNDERSTANDING THE SCIENCE-RELIGION RELATIONSHIP

Week 2: Four ways of relating science and religion

Key questions to orient reading and discussion:

- i. What are the basic features of the four models of science and religion presented by Barbour or Haught?
- ii. Which model is more appropriate for your faith and ministry?

Common Reading:

Barbour, Religion and Science, pp.77-105.

Haught, Science and Religion, pp.9-46.

Recommended Reading:

Ted Peters, "Science and Theology: Toward Consonance" in Science and Theology, 11-39.

Polkinghorne, Science and Theology, pp. 128-33.

III. HISTORY OF THE INTERACTION BETWEEN RELIGION AND SCIENCE

Week 3: Physics and metaphysics in the fifteenth, sixteenth and seventeenth centuries

Key questions to orient reading and discussion:

- i. What is the relationship between science and faith or biblical interpretation in this period?
- ii. What are Galileo's perspective of the Bible and Calvin's view of the natural science?

Common Reading:

Barbour, Religion and Science, pp.3-17.

McGrath, Science and Religion, pp. 1-15.

Recommended Reading:

Lindberg and Numbers, God and Nature, Korean Trans., pp. 78-191.

Brooke, Science and Religion, pp.52-116.

Week 4: Newtonian worldview and Deism in the eighteenth century

Key questions to orient reading and discussion:

- i. What is the interaction between science and theology in this period?
- ii. Why was the Newtonian worldview preferred by the church?

Common Reading:

Barbour, Religion and Science, pp.17-32.

McGrath, Science and Religion, pp.16-21.

Recommended Reading:

Lindberg and Numbers, God and Nature, Korean Trans., pp.301-350.

Brooke, Science and Religion, pp.117-225.

M.J. Buckley, "The Newtonian Settlement and the Origins of Atheism," in Physics, Philosophy, and Theology, pp.81-102.

Week 5: Biology and theology in the nineteenth century

Key questions to orient reading and discussion:

- i. What is the interaction between science and theology in this period?
- ii. Why was generally the Darwin's theory rejected by the church?

Common Reading:

Barbour, Religion and Science, pp.49-63.

McGrath, Science and Religion, pp.21-26.

Recommended Reading:

Lindberg and Numbers, God and Nature, Korean Trans., pp.472-520.

Brooke, Science and Religion, pp.275-320.

Week 6: Philosophy of science in the twentieth century

Key questions to orient guest lecture and discussion:

- i. What are major issues of philosophy of science in this period?
- ii. How are they related to modern and post-modern thoughts?

Guest Lecturer:

Dr. Dekryoung Kim, Professor of Philosophy, Hannam University

Common Reading:

McGrath, Science and Religion, pp.57-86.

Week 7: Science and religion in the twentieth century

Key questions to orient reading and discussion:

- i. What is the interaction between science and theology in this period?
- ii. What is the influence of science upon biblical interpretation?

Common Reading:

Brooke, *Science and Religion*, pp.321-47.

James Barr, "Natural Theology within Biblical Theology" in *The Concept of Biblical Theology*, pp.468-96.

Recommended Reading:

Lindberg and Numbers, *God and Nature*, Korean Trans., pp.566-625.

Polkinghorne, *Science and Theology*, pp.25-48.

IV. HISTORY OF UNDERSTANDING CREATION IN SCIENCE AND RELIGION

Week 8: Creation in the Hebrew Scriptures and Ancient Near Eastern texts

Key questions to orient reading and discussion:

- i. How are the concepts of creation in the Hebrew Scriptures related to the worldview and history of Ancient Near East?
- ii. What are the theological messages in the creation texts of the Hebrew Scriptures?

Common Reading:

R.J. Clifford, "Creation in the Hebrew Bible," in *Physics, Philosophy and Theology*, pp.151-70.

Hayes, *The Gift of Being*, 25-32.

Recommended Reading:

Cheon, *Genesis Commentary (Korean)*, pp.55-89.

Cheon, "Wisdom Literature and Creation Faith in the Old Testament," *Christian Culture Studies* 2 (1997), 305-19 (Korean).

Week 9: Creation in the intertestamental literature and the Christian Scriptures

Key questions to orient reading and discussion:

- i. What are the concepts of creation in the biblical and extra-biblical literature from the second century B.C.E. to the first century C.E.?
- ii. How was the Greek cosmology reflected in Judaism?

Common Reading:

Hayes, *The Gift of Being*, 33-40.

Cheon, "Religious Ideas of Philo of Alexandria," *Korea Journal of Christian Theology* (2002, forthcoming) (Korean).

Recommended Reading:

Cheon, "Anthropology in the Wisdom of Solomon," *Journal of Theology* 2 (1996), 231-44 (Korean).

Cheon, "Religious Ideas in the Qumran Community," *Korea Journal of Christian Theology* 20 (2001/4), 51-74 (Korean).

Week 10: Creation in the history of the western theology

Key questions to orient reading and discussion:

- i. What is the history of the doctrine of creatio ex nihilo and creatio continua?
- ii. How was creation understood by theologians, including Augustine, Aquinas, Luther and Calvin?

Common Reading:

Hayes, *The Gift of Being*, pp.41-51.

McGrath, *Science and Religion*, pp.113-18.

Recommended Reading:

Lindberg and Numbers, *God and Nature*, Korean Trans., 39-77.

E. McMullin, "Natural Science and Belief in a Creator: Historical Notes," in *Physics, Philosophy and Theology*, 49-79.

V. INTERRELATION BETWEEN THEOLOGY OF CREATION AND CURRENT THEORIES OF SCIENCE

Week 11: Quantum theory and Quantum gravity

Key questions to orient guest lecturer and discussion:

- i. What are important conceptual issues of Quantum theory and Quantum gravity?
- ii. What is Quantum creation of the universe?

Guest Lecturer:

Dr. Jongyong Lee, Professor of Physics, Hannam University

Common Reading:

Barbour, *Religion and Science*, 165-194.

Week 12: Astronomy and creation

Key questions to orient reading and discussion:

- i. What is the relationship between the big bang theory and creation theology, especially *creatio ex nihilo* and *creatio continua*?
- ii. What are the dangerous points in identifying the big bang theory with Genesis creation stories?

Common Reading:

Barbour, *Religion and Science*, pp.195-220.

Haught, *Science and Religion*, pp.100-19.

Recommended Reading:

Ted Peters, "On Creating the Cosmos," in *Physics, Philosophy, and Theology*, pp.273-96.

W.R. Stoeger, "Contemporary Cosmology and Its Implications for the Science-Religion Dialogue," in *Physics, Philosophy, and Theology*, pp.219-47.

Kim, Sangil, *Foundational Cosmology and Anti-foundational Cosmology: Comparison between Creation Theory and Big Bang Theory*," *Christian Thought* 473 (1998/5), 130-46 (Korean).

Week 13: Genetics and the Human Genome Project

Key questions to orient guest lecture and discussion:

- i. What is the Human Genome Project?
- ii. What are important issues in recent genetics?

Guest Lecturer:

Dr. Junggeun Ahn, Professor of Molecular Biology and Genetics, Chungnam University

Common Reading:

R. David Cole, "The Genome and the Human Genome Project," in *Genetics*, 49-70.

Week 14: Evolution and continuing creation

Key questions to orient reading and discussion:

- i. How is evolutionary theory related or opposed to creation theology?
- ii. What are the dangerous points if Christian creation faith is based on "creation science"?

Common Reading:

Barbour, *Religion and Science*, pp.221-49.

Haught, *Science and Religion*, pp.47-71.

Recommended Reading:

James Barr, "Evolution and Anti-Evolution," in *The Concept of Biblical Theology*, pp.85-99.

Lindberg and Numbers, *God and Nature*, Korean Trans., pp.521-65.

Wolfhart Pannenberg, "Human Life: Creation Versus Evolution?" in *Science and Theology*, pp.137-48;
Korean Translation by Jihoon Hong in *Conciliatio Theologiae* 2 (2001/2), 127-50.

Week 15: Process thought and creation

Key questions to orient reading and discussion:

- i. What is creation in process philosophy?
- ii. How can we interpret Genesis creation stories in the perspective of process philosophy?

Common Reading:

Barbour, *Religion and Science*, pp.281-332.

McGrath, *Science and Religion*, pp.105-109.

Recommended Reading:

Gruse, "Alfred North Whitehead: Philosopher of Process Thought"; "Creation: God and the World Process," in *The Old Testament and Process Theology*, pp.27-42, 97-110.

Polkinghorne, *Science and Theology*, pp.55-6, 87.

VI. CONCLUSION

Week 16: Reflection of the course

Key questions to discussion and presentation:

- i. How should Christian ministers respond to new science's demand for dialogue?
- ii. What is the meaning that science and theology conjointly attempt to articulate?

All students briefly present and submit their term papers in the class.

All students fill out a course evaluation form.