

SCIENCE AND CHRISTIAN BELIEF

Institution: Ridley College, Melbourne

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Aim

The course is intended to give a basic understanding of the issues raised by modern science and the relationship of these issues to the Christian Faith. It will consider the misconceptions commonly held - by secular humanists, by the general public and also by many Christians - with respect to this relationship. A complementary approach to Science and Faith will be presented, one which is consistent with both scientific integrity and Biblical authority. The course will be conducted by professional scientists who are Fellows of ISCAST, (Institute for the Study of Christianity in an age of Science and Technology) and will be suitable for both students (science and other) and teachers who encounter the above issues. While some background in science is desirable, no particular scientific or theological background is assumed.

Content

Three aspects will be addressed:

A consideration of the history of the relationship between science and faith from early Greek times to the present day.

A consideration of contemporary approaches to science and faith with attention being given to modern insights in the philosophy of science, and of the ways of gaining both scientific and theological knowledge and of their limitations.

A consideration of some of the current issues being debated in the science /faith arena.

COURSE DETAILS

Syllabus

Introductory Considerations

Attention is drawn to the Notes on Science and Christian Belief (Allan. J. Day, Ed.) which cover the general area of the course. Candidates are strongly advised to obtain a copy of these notes and to read the relevant material before the lectures. The introductory

chapter “Introduction to the issues of Science and Belief” serves to orientate candidates to some of the current issues of Science and Christian Belief. Seven misconceptions about the relationship between science and faith are considered. 1. That science does away with the need for God. 2. That science and faith are incompatible. 3. That Christian Faith is irrational. 4. That science is determinist. 5. That science can prove God. 6. That a scientific world view is unnecessary. 7. That the Bible is a scientific text book. This will set the scene for the sessions that follow.

Reading List

POOLE, Michael, *A Guide to Science and Belief*, (Lion, London, 1990)

POLKINGHORNE, John, *Quarks, Chaos and Christianity*, (Triangle, London, 1995)

LUCAS, Ernest, *Genesis Today*, (SU, London, 1989)

WILKINSON, David, *God, the Big Bang and Stephen Hawking*, (Monarch, Tunbridge Wells, 1993)

RUSSELL, Colin, *Crosscurrents*, (IVP, Leicester, 1985)

1. March 22nd - Historical Overview - From Aristotle to the 18th C.

Some Historical Encounters

Galileo and Geocentrality, Newton and the Deterministic Universe, Deism and the Enlightenment, Ussher and the Age of the Earth

The development of the modern scientific movement and its background in Greek science and in Judeo Christian theology will be traced and some of the main reasons for the revolutionary development of science in the 16th 17th C will be considered. The historical context of the Galileo trial and some of its causes will also be addressed as an illustration of the interaction of science and belief.

A consideration of the development of Newtonian physics and its contribution to the concept of a mechanistic universe and of the rise of deism and of Natural theology. The development of geology and its contribution to the debate about the age of the earth in relation to the biblical interpretation of the Genesis account. A consideration of “Scriptural geologists.”

Reading List:

LINDBERG, D. C. and NUMBERS, R. L. (eds) *God and Nature* (University of California Press, Berkeley, 1986) Chapters 1, 2, 8,9,10,12.

HOOYKAAS, R. *Religion and the Rise of Modern Science* (Eerdmans, Grand Rapids, 1972)

RUSSELL, C. A. *Cross-currents. Interactions between faith and science.* (Intervarsity Press, Leicester, 1985). Chapters, 2, 3, 4,5,6,7

HUMMEL, C. E. *The Galileo connection.* (Inter Varsity Press, Downers Grove, Illinois, 1986)

BROOKE, J. H., *Science and Religion - Some Historical Perspectives* (CUP, Cambridge, 1991) Chapters II, III, IV, V, VI.

2. March 29th - Historical Background 2 - From Darwin to Hawking

Historical Encounters cont.

*Darwinism and Evolution, 20th Century Revolution in Physics
Modernism to Post Modernism*

The development of Darwinism will be considered in its historical context in mid Victorian England. The background of Paley's natural theology with its concept of a static world and of special creation will be traced. The importance of the political and social climate of the times and of the struggle by emerging professional scientists for cultural supremacy will be emphasized. The response to Darwinism by both the scientific and the theological communities will be traced and the aftermath of these responses into the fundamentalist and anti evolution movements of the 20th C considered. In addition a brief historical summary of the development of the new physics and of New Age relativism will be described.

Reading List:

LINDBERG, D., and NUMBERS, R. Eds. *God and Nature - Historical Essays on the Encounter between Christianity and Science*, (Univ. of Calif. Press, Berkeley, 1986), Chapters 14, 15, 16.

RUSSELL, C.A., *Cross Currents - Interactions between Science and Faith*, (IVP, Leicester, 1985), Chapters 8, 9, 10.

BROOKE, J.H., *Science and Religion - Some Historical Perspectives* (CUP, Cambridge, 1991), Chapters VI, VII, VIII.

LIVINGSTONE, D., *Darwin's Hidden Defenders* (Eerdmans, Grand Rapids, 1987)

MOORE, J., *The Post Darwinian Controversies* (CUP. Cambridge, 1979)

LUCAS, E., *The New Age Challenge* (Apollos, Leicester, 1996)

3. April 5th – God’s Interaction with the World - Some Metaphysical Considerations

*World views, world pictures. Deism, Semideism and Theism
Miracles and Prayer*

The concept of world views and world pictures will be developed in relation to a metaphysical understanding of nature. Deistic, Semideistic and Theistic approaches will be described and discussed. They will be evaluated and contrasted with a monistic and pantheistic understanding of nature. The interaction of God with nature will be considered both in relation to scientific law and in relation to prayer and miracles.

Reading List

JEEVES, M.A. *The Scientific Enterprise and Christian Faith* (Tyndale, London, 1969) pps. 28-34

HOUGHTON. J. *The Search for God* (Lion, London, 1995) Chapter 12, 13

POLKINGHORNE, J. *Quarks, Chaos and Christianity* (Triangle, London, 1995) Chapters 5.6

POLKINGHORNE, J. *Science and Providence* (SPCK, London, 1989) Chapters 4, 6.

HUMMEL C.E., *The Galileo Connection* (IVP, Downers Grove, 1986) pps. 179- 197

Easter Break: April 12th - 17th

4. April 19th - Rational Inquiry - Science and Theology and their Limitations

Science Knowledge and its Limitations - Models and Scientific Theory

Theological Knowledge and its Limitations - Motivated Belief

The means of obtaining scientific and theological knowledge will be considered and the difference and similarities in these means considered. This will be set in the context of an understanding of the nature of science and of theology and of some of the limitations that each has as systems of knowing. The relationship of objective elements and of subjective elements will be addressed and a brief consideration of the concepts of Popper, Polanyi and Kuhn considered.

Reading List

POLKINGHORNE, John, *Beyond Science* (CUP, Cambridge, 1996) Chapter 2

POLKINGHORNE, John, *Quarks, Chaos and Christianity*, (Triangle, London. 1994) Chapter 1

POLKINGHORNE, John, *The Way the World is* (Triangle, London, 1983) Chapter 2.

FERGUSON, Kitty, *The Fire in the Equations* (Bantam, London, 1994) Chapter 3.

Van TILL and OTHERS, *Portraits of Creation* (Eerdmans, Grand Rapids, 1990), Chapter 5.

Van TILL and OTHERS, *Science Held Hostage* (Eerdmans, Grand Rapids, 1988) Chapters 1, 2.

HODGSON, Peter, *Christianity and Science* (OUP, Oxford, 1990)

POOLE, Michael, *Beliefs and Values in Science Education* (Open U. P., Buckingham, 1995)

5. April 26th - Ways of relating Science and Faith

Conflict - Scientism, Biblical Literalism, Post Modernism
Complementarity - From Separation to Complementarity and Integration

Various models for relating science and faith will be considered. These are based broadly on those suggested by Barbour, but with some variations. They include Conflict, Separation, Consonance (or Dialogue), Integration and Rejection (New Age). Appreciable space is given to a critique of two contrasting examples of the conflict model, Scientism and Biblical Literalism. The other models are also considered and evaluated regarding their adequacy in promoting an understanding of the science/faith interface.

Reading List:

BUBE, R., *Putting it All Together- Seven Patterns for relating Science and the Christian Faith*, (Univ. Press of America, Lanham, 1995)

BARBOUR, Ian, *Religion in an Age of Science* (SCM, London, 1990), Chapter 1 pps. 3-30

HAUGHT, J., *Science and Religion* (Paulist Press, N.J. 1995)

PETERS, T., "Theology and Science, Where are We?" *Zygon* 31, (2) 1996. (Reprinted in *Evangelical Digest* (ISCAST) No. 6, Dec 1996)

6. May 3rd - Cosmology, Creation and the Biblical Record

Cosmology and Creation - The Big Bang and Stephen Hawking

Implications of Cosmology for a Biblical Doctrine of Creation

The development of the “New Physics” and of its significance in changing our understanding of a deterministic view of the Universe will be described. The background evidence for the Big Bang theory of cosmic origins will be considered and some of the implications of this theory for theology addressed. Attention will be paid to the importance of the New Physics for a New Natural Theology, in particular in relation to the Anthropic Principle.

Reading List:

POLKINGHORNE, J. *Science and Creation* (SPCK. London, 1988)

DAVIES, P. *The Mind of God* (Penguin, London, 1992)

WORTHING, M. *God, Creation and Contemporary Physics* (Fortress, Minneapolis, 1996) Chapter 1

GRIBBEN, J. *In Search of the Big Bang* (Corgi, London 1987)

Van TILL, H. and OTHERS, *Portraits of Creation* (Eerdmans, Grand Rapids, 1990)

Chapter 4

FERGUSON, Kitty, *The Fire in the Equations* (Bantam, London, 1994)

7. May 10th. - Evolution and Creation

Evolution: Biological, Theological and Biblical Issues

Science and Biblical Interpretation, Adam, Anthropology and the Genesis Record

The scientific basis for the theory of evolution by natural selection will be reviewed and the main scientific objections indicated. The evidence both from physical anthropology and from molecular genetics for human evolution will also be considered. The theological and biblical problems raised in relation to this scientific data will be evaluated and the interpretation of the Genesis creation accounts considered on this basis.

Reading List:

JURMAIN, R. and NELSON, H., *Introduction to Physical Anthropology* (West, Minneapolis, 1994)

BURENHULT, G., Ed., *The First Humans, Illustrated History of Mankind*, Vol 1 (QUP, Brisbane, 1993)

LEAKEY, R., *The Origin of Mankind* (Phoenix, London, 1994)

DAWKINS, R. *The Blind Watchmaker* (Longman, London, 1986)

BERRY, R.J., *God and Evolution* (Hodder and Stoughton, London, 1988)

POOLE, M. and WENHAM, G.J., *Creation or Evolution - A False Antithesis* (Latimer House, Oxford, 1987)

BLOCHER, H., *In the Beginning* (IVP, Leicester, 1984)

SPANNER, D.C., *Biblical Creation and the Theory of Evolution* (Paternoster, Exeter, 1987)

LUCAS, E., *Genesis Today* (Scripture Union, London, 1989)

DAY, Allan J. "Adam, Anthropology and the Genesis Record," Zadok Paper S90, 1997

8. May 17th. - The Nature of Humanity

The Nature of Humanity, Biological and Theological Concepts

Mind and Brain, Nature of the Soul

The interaction of the scientific view of humanity with the theological view of humanity will be addressed. The interaction of biology and theology in arriving at an adequate understanding of humanity will be stressed. Genetic and other biological models and the complementarity of genetic, anthropological, neurophysiological and biblical approaches to an understanding of humanity will be noted.

Reading List:

JEEVES, M.A. *Mind Fields* (Apollos, Leicester, 1994)

JEEVES, M.A., *Human Nature at the Millennium* (Baker, Grand Rapids, 1996)

BERKOUWER, G.C., *Man: The Image of God* (Eerdmans, Grand Rapids, 1962)

SHERLOCK, C., *The Doctrine of Humanity* (IVP, Leicester, 1996).

BUBE, R., *Putting it all Together* (Univ. Press of America, Lanham, 1995), Chapter 10.

PEACOCKE, A., *God and Science* (SCM, London 1996), Chapter 3, Human Being.

PEACOCKE, A., *Theology for a Scientific Age* (SCM, London, 1993), Chapter 12.

POLKINGHORNE, J., *Science and Christian Belief* (SPCK, London, 1994) Chapter 1.

BARBOUR, Ian, *Religion in an Age of Science* (SCM, London, 1990) Chapter 7.

BRYANT, J.A. "Mapping the Human Genome Project," *Science and Christian Belief* 1992 4(2) 105-125

9. May 24th - Genetics, Reproductive Technology and Ethics

A consideration of the implications of modern reproductive technology for theology and ethics. In Vitro Fertilisation. Technology, Genetic Engineering and Cloning.

The ethical implications of molecular biology and of reproductive technology will be considered on the background of the rapid advance in the scientific technology available. A brief overview of the scientific background of the area will be given, followed by a consideration of the ethical principles that might give some guidance. This will be developed in the context of a consideration of the interaction of science and theology in this area.

Reading List:

JONES, Gareth, *Manufacturing Humans* (IVP, Leicester, 1987)

JEEVES, M.A., *Human Nature at the Millennium* (Baker, Grand Rapids, 1996)

CAMERON N. Ed., *Embryos and Ethics: The Warnock Report in Debate* (Rutherford House, Edinburgh, 1987)

FISHER, A., IVF, *The Critical Issues* (Collins Dove, Melbourne, 1989)

NELSON, J.R., *On the New Frontiers of Genetics and Religion* (Eerdmans, Grand Rapids, 1994)

PETERS Ted, "Cloning Shock: A Theological Reaction" *CTNS Bulletin* 17(2) 1997

PETERS, Ted, Ed., *Genetics: Genes, Religion and Society* (Pilgrim, 1998)

10. May 31st - The Earth and its Environment

Environmental issues and their Theological implications

Science and Conservation - towards a Theology of Nature

The growth in the scientific understanding of the earth from earliest to modern times will be briefly reviewed. Following general consideration of natural and human based environmental problems, some technical and theological aspects of appropriate and inappropriate responses will be discussed.

Reading List:

RUSSELL, Colin, *The Earth, Humanity and God* (Univ Col Press, London, 1993)

HORE-LACY, I. and BARNS, I., *Two Views - On Managing the Earth's Resources*, Zadok Paper S82, 1996

Assessment

An essay of 1500 (min)-3000 (max) words to be submitted at the end of the course (by May 31st) on one of the following topics. The essay should be suitably referenced, contain a summary and demonstrate the ability to evaluate the issues covered. The essay reading and preparation is considered a valuable part of the course.

1. How would you respond to the proposition that “Science removes the need for God”
2. Discuss the relevance of natural theology today with particular reference to the Anthropic Principle.
3. What are the implications of the findings of science for the interpretation of Scripture.
4. Develop a theology of the environment that is biblically based and consistent with our understanding of modern science.
5. Write an essay on the meaning and relevance of the “soul” in relation to modern concepts of brain function.
6. Discuss the implications of modern physics for the biblical doctrine of creation.
7. Discuss the implications of modern biological science for a biblical doctrine of humanity.
8. Distinguish between reproductive and therapeutic cloning and consider the ethical justification of these techniques

General References:

Introductory Reading

A. History

**RUSSELL, Colin, *Crosscurrents* (IVP, Leicester, 1985)

BERRY, R. J., *Real Science, Real Faith* (Monarch, Crowborough, 1991)

HUMMEL C.E., *The Galileo Connection* (IVP, Downers Grove, 1986)

B. Contemporary Issues

**POOLE, Michael, *A Guide to Science and Belief* (Lion, London, 1990)

**POLKINGHORNE, John, *Quarks, Chaos and Christianity* (Triangle, London, 1995)

FERGUSON, Kitty, *The Fire in the Equations* (Bantam, London, 1994)

HOLDER, Rodney, *Nothing but Atoms and Molecules* (Monarch, Tunbridge Wells, 1993)

HOUGHTON, John, *The Search for God* (Lion, London, 1995)

MacKAY, Donald, *The Open Mind and other Essays* (IVP, Leicester, 1988)

POLKINGHORNE, John, *The Way the World Is* (Triangle, London, 1992)

STANNARD, Russell, *Doing Away with God* (Marshall Pickering, London, 1993)

STANNARD, Russell, *Science and Wonders* (Faber, London, 1996)

Van TILL, Howard and others, *Portraits of Creation* (Eerdmans, Grand Rapids, 1990)

C. Problems for Modern Science

**LUCAS, Ernest. *Genesis Today* (SU, London, 1989)

**WILKINSON, David, *God, the Big Bang and Stephen Hawking* (Monarch, Tunbridge Wells, 1993)

BERRY, R. J., *God and Evolution* (Hodder and Stoughton, London, 1988)

JEEVES, M. and BERRY, R., *Science, Life and Christian Belief* (Apollos, Leicester, 1998)

LIVINGSTONE, D.N. *Darwin's Forgotten Defenders* (Eerdmans, Grand Rapids, 1987)

RUSSELL, Colin, *The Earth, Humanity and God* (Univ Col Press, London, 1993)

WILKINSON, David, *Alone in the Universe* (Monarch, Crowborough, 1997)

More Advanced Reading

A. History

BROOKE, J., and CANTOR, G., *Reconstructing Nature* (TT Clark, Edinburgh, 1998)

BROOKE, J., *Science and Religion - Some Historical Perspectives* (CUP, Cambridge, 1991)

HOOYKAAS, R., *Religion and the Rise of Modern Science* (Eerdmans, Grand Rapids, 1972)

LINDBERG, D. C. and NUMBERS, R.L. *God and Nature* (Un. of Calif. Press, Berkeley, 1986)

MOORE, James. *The Post Darwinian Controversies* (CUP, Cambridge, 1979)

B. Contemporary Issues

BARBOUR, Ian, *Religion and Science* (SCM, London, 1998)

HAUGHT, John, *Science and Religion* (Paulist Press, N. J., 1995)

JEEVES, M. and BERRY, R. J. *Science, Life and Christian Belief* (Apollos, Leicester, 1998)

PEACOCKE, Arthur, *Theology for a Scientific Age* (SCM, London, 1993)

POLKINGHORNE, John, *Reason and Reality* (SPCK, London, 1991)

POLKINGHORNE, John, *Science and Christian Belief* (SPCK, London 1994)

POLKINGHORNE, John, *Beyond Science* (CUP, Cambridge, 1996)

POOLE, Michael, *Belief and Values in Science Education* (OUP, Bucks, 1995)

C. Problems for Modern Science

GARETH JONES, D., *Manufacturing Humans* (IVP, Leicester, 1987)

GARETH JONES, D., *Valuing People* (Paternoster, Carlisle, 1999)

JEEVES, Malcolm, *Human Nature at the Millennium* (Baker, Grand Rapids, 1997)

JEEVES, Malcolm, *Mind Fields* (IVP, Leicester, 1993)

WORTHING, M. *God, Creation and Contemporary Physics* (Fortress, Minneapolis, 1995)

Further Reading will be provided by individual lecturers.