Dordt College Syllabus, Spring 2004

Perspectives in Physical Science

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Instructors

This course is team-taught by philosopher Dr. Roger Henderson (FO-121, x. 6330, rogerh@dordt.edu) and physicist Dr. John Zwart (SB -224, x 6288, zwart@dordt.edu). You are encouraged to visit us in our offices any (free) time or by appointment.

Meetings, Assignments, & Evaluation

The class will meet in CL-168 two hours once a week for lectures, discussion, text interpretation, and student presentations. In addition, students will meet in groups of two to four with either or both of the professors seven times for approximately one hour. During this time each student will read aloud a short paragraph or a paper which he or she has written. A paragraph should consist of a thesis, some argumentation, and a statement of the student’s own views – on an assigned or freely chosen topic. For three of these meetings a paper (three to five pages in length) is to be written and will be read aloud and discussed by fellow students and then with the professor, pointing out strengths and weaknesses; the paper may often build on the paragraph discussed at the previous meeting. After a paper has been read and discussed, the professor will assign an evaluation at the end of the meeting or by the next meeting. Paragraphs are not graded. The purpose of these exercises is to allow for close interaction among students and between students and professors. This affords students a direct and immediate response to their work through detailed discussion. This method also helps the professors to better assess the level of understanding students have achieved. Finally, it provides the student another opportunity to ask questions and discuss difficult topics.

The course grade is determined by assigning 25 points for class participation and paragraphs, 15 points to each of three papers, 10 points to the midterm exam, and 20 points to the comprehensive final exam; 90, 80, 70, or 60 points earn the student an A, B, C, or D respectively. One week before the exams, students will be given a list of questions, some of which will appear on the exam. Questions given for the midterm may also appear on the final.

Course Description

Historical, philosophical, and theological perspectives in the physical sciences are discussed and developed. The historical and contemporary roles of Christianity and other influential forces in science are considered. Prominent positions in the philosophy of science are examined. Aspects of the complex interactions between Christian faith and the physical sciences are discussed.
Course Objectives

Through this course, students will:

• explore the inner connection between faith and scientific understanding by examining some key operational concepts crucial to the growth of science.
• stimulate vocational commitment to science as an integral part of a religious outlook.
• investigate particular moments in the history of science – people and ideas contributing to this extraordinarily productive activity.
• examine the conceptual struggles which preceded the establishment of scientific methods in the light of certain theological developments.
• witness struggles in establishing reliable methods of testing and accounting for theories.
• develop good interpretive, writing, and speaking skills.
• cultivate intellectual and spiritual courage and humility.
• recognize the pitfalls of narrowness, dogmatism, idealizing or villainizing science, and of dismissing theology.

Texts


Additional articles and other materials (e.g. videotape) may be assigned as appropriate.