



City University

Syllabus

for the

College Of Business, Arts And Humanities

BC 304

Science, Technology And Community Values

5 Credit Hours

Effective: 1/98

Online Distance Learning*

Prepared by

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**To take this course via Online Distance Learning, you must be registered specifically for that option.*

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Required Texts And Materials

Alioto, Anthony M. A History of Western Science. 2nd ed. Englewoods Cliffs, NJ: Prentice Hall, 1993.

Bender, David L., Bruno Leone and Terry O'Neill. Biomedical Ethics. San Diego, CA: Greenhaven, 1994.

Carey, Stephen S. A Beginner's Guide to Scientific Method. Belmont, CA: Wadsworth, 1994.

Ginn Press: BC 304 Science, Technology and Community Values; selected chapters from Inquiry: A Cross-Curricular Reader edited by Lynn Z. Bloom and Edward M. White.

Tobacco Goes On Trial: BC 304-Science, Technology and Community Values. Compact Disc. Bellevue, WA: Talking Dog Media, 1997.

Lester, James D. Writing Research Papers: The City University Style Manual. 8th ed. New York: HarperCollins, 1996.

The Library Zone: Your Guide to Library Information Resources-Liberal Studies Edition. Video and workbook. Renton, WA: City University, 1995. (Required for students in U.S. only.)

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Electronic Requirements to Enroll in Course

Along with the following computer system requirements, the student must have an Internet Account (either SLIP or PPP) with an Internet Service Provider. This will provide for both Web Access and an Email account for communication with the instructor or other students.

Minimum System Requirements

For PC	For Mac
CPU 486/66	Performa 550 (or 68040 processor)
16 MB RAM	16 MB RAM
4 MB hard disk space free	4 MB hard disk space free
Video card supporting VGA w/256 colors	8 bit color display
CD-ROM drive (2x)	CD-ROM drive (2x)
8 bit sound card (with external speakers)	QuickTime v2.5
QuickTime for Windows v2.0	Sound Manager v3.0
Windows 3.1	Apple System 7.2
14.4 bps data-fax modem or higher	14.4 bps data-fax modem or higher
Netscape 3.0 /Internet Explorer 3.01	Netscape 3.0 /Internet Explorer 3.01

Recommended System Requirements

For PC	For Mac
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Pentium 60+	Centris 660 A/V or later model
24 MB RAM	24 MB RAM
4 MB hard disk space free	4 MB hard disk space free
Video card supporting VGA w/256 colors	8 bit color display
CD-ROM drive (4x)	CD-ROM drive (4x)
16 bit sound card (with external speakers	QuickTime v2.5
QuickTime for Windows v2.0	Sound Manager v3.0
Windows 3.1/Win 95	Apple System 7.2
28.8 bps data-fax modem or higher	28.8 bps data-fax modem or higher
<u>Most Recent Netscape/Internet Explorer</u>	<u>Most Recent Netscape/Internet Explorer</u>

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Foundation Elements For

BC 304

Science, Technology And Community Values

The Foundation Elements of **BC 304 Science, Technology, and Community Values** include the Course Description and Learning Objectives. They are fundamental to the course and are common to all modes of delivery for this course, including regular classroom instruction, Distance Learning and Online Distance Learning. Specific course activities and assignments may vary according to instructional delivery mode, but they all incorporate and address the same Foundation Elements. Please consult *The City University Handbook for Distance Learning* for information regarding the procedures that apply to Online Distance Learning.

See the *City University Catalog* for information about general City University policies.

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Course Description

The emergence of modern science is examined with an emphasis on the scientific method and discoveries and theories impacting today's society.

Additional subject areas covered in this course include: Critical Thinking, Religion, History, Ethics, and Social Science.

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The Interdisciplinary Core

The six courses of the undergraduate core program were developed to provide a common curriculum for students as they embark on a major track of study. The premise for this program is that education is a life-long enterprise which demands more than mere professional training.

City University has taken an interdisciplinary approach to this program because we believe that a thorough grounding in the humanities will provide you with the adaptability you will need in a world of constantly changing circumstances and opportunities. A fundamental knowledge of the natural sciences, mathematics, literature, the arts, social sciences and philosophy will enable you to follow and evaluate arguments in those disciplines. By presenting you with balanced opposing viewpoints on complex, controversial and sensitive contemporary issues, these courses will also make you more aware of the interrelationship among the philosophical, technical, artistic, and moral problems of today's society.

This approach emphasizes the acquisition not only of skills in critical thinking and analysis, spoken, written and symbolic communication, and ethical decision making, but also of new perspectives that will help you to:

- ▣ perceive patterns in complexity
- ▣ develop creative solutions to issues
- ▣ render reasonable judgments
- ▣ make wise choices under conditions of uncertainty

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Learning Objectives

All objectives listed here will be demonstrated in writing unless otherwise stated. Upon completion of this course, you will be able to:

1. Evaluate the contributions of ancient societies, especially the Greeks, to the development of science and mathematics;
2. Evaluate the relationship of mathematical discoveries to the emergence of science;

2. Evaluate the relationship of mathematical discoveries to the emergence of science;
3. Describe the historical development of science from a religion or philosophy into a scientific field using the scientific method;
4. Evaluate the roles played by the Renaissance astronomers as science began to diverge from religion;
5. Examine the continuing and growing ethical dilemmas caused by current scientific advances, as illustrated by developments in genetic research;
6. Apply the scientific method to other types of problem solving; and
7. Evaluate scientific events as they relate to one another from a historical perspective.

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Recommended Supplementary Resources

Print Resources

Encyclopedia of Ethics. New York: Garland, 1992.

Timetables of Science: A Chronology of the Most Important People and Events in the History of Science. New York: Simon & Schuster, 1991.

Beauchamp, Tom and James Childress. Principles of Biomedical Ethics. London: Oxford University, 1988.

Boorstin, Daniel J. The Discoverers. New York: Vintage Books, 1985.

Bronowski, Jacob. Magic, Science and Civilization. New York: Columbia University Press, 1980.

Knauss, Lawrence. Fear of Physics: A Guide for the Perplexed. New York: Basic Books, 1993.

Knox, Bernard. The Oldest Dead White European Males. New York: W.W. Norton, 1993.

Roberts, Rayston M. Serendipity, Accidental Discoveries in Science. New York: Wiley, 1989.

White, Michael. Stephen Hawking: A Life in Science. New York: Dutton, 1992.

Electronic Resources

The following general Internet World Wide Web resources may be of use to you in this course. Please be aware that Web addresses may change from time to time. Consult with your instructor or *The City University Handbook for Distance Learning* if you have questions about electronic resources.

Paradigm Online Writing Lab
<http://www.idbsu.edu/english/cguilfor/paradigm>

The Research Paper and the World Wide Web site for the book of the same title.
<http://www.prenhall.com/~bookbind/pubbooks/rodrigues/>

The World Wide Web Virtual Library
<http://vlib.stanford.edu/overview.html>

My Virtual Reference Desk
<http://www.refdesk.com>

History of Science Library
http://www.wcsu.ctstateu.edu/library/s_history_of_science.html

The WWW Virtual Library of the History of Science, Technology and Medicine
http://www.asap.unimelb.edu.au/hstm/hstm_ove.htm

History of Science, Technology, and Medicine (John's Hopkins)
http://milton.mse.jhu.edu:8001/research/history_of_science/homepage.htm

Comparison of the Socratic Method to the Scientific Method
<http://www.soci.niu.edu/~phildept/Dye/method.html>

Nicotine Fact Sheet
http://whyfiles.news.wisc.edu/024nicotine/fact_sheet.html

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Overview of Course Activities and Grading

The assignments and activities described below pertain specifically to the Online Distance Learning mode of instructional delivery for this course. Please be sure that this document matches the mode of delivery for which you have registered, as materials and assignments for each delivery mode may differ somewhat.

There are several optional activities throughout this course that are designed to give the student an opportunity to acquire more depth of knowledge about the course material. While students are encouraged to participate in as many of these activities as possible, only the specific items listed below will be graded assignments. The grade you receive for the course will be derived using City University's decimal grading system, based on the following:

Assignment	Percentage
Discussion Folder Participation	5%
Assignment 1	5%
Assignment 2	5%
Assignment 3	5%
Assignment 4	5%
Assignment 5	5%
Assignment 6	5%
Assignment 7	5%
Assignment 8	15%
Assignment 9	20%

Final Examination	25%
TOTAL	100%

Please consult with your instructor and/or the current City University catalog for guidance in determining your decimal grade.

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Explanation of Assignments

Discussion Folder Participation

During various weeks the student will be asked to contribute comments to the course discussion folder. Students are encouraged to participate whenever this activity is offered. The instructor may choose what level of participation he or she will have with students via the Discussion Folder.

Weekly Assignments

The explanations for each of the weekly assignments to be submitted for a grade are listed in the Assignments sections of the Instructional Center.

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Grading Criteria for Assignments

Discussion Folder

<i>Graded Element</i>	<i>Percentage</i>
Relevance to topic and course concepts	50%
Proper use of Netiquette*	50%
TOTAL	100%

*See the *City University Handbook for Distance Learning* for the explanation of this term.

Assignments One Through Eight

Graded Element	Percentage
Utilization of Terms and Concepts from Course Material	25%
Clear Demonstration of the Major Issues	25%
Appropriate Detail to Support Answer	20%
Logical and Supported Conclusions	20%
Grammar, Spelling, Punctuation and Syntax	10%
TOTAL	100%

Assignment Nine

Graded Element	Percentage
Description of Phenomena/Activity	10%
Accurate and Consistent Record Keeping	20%
Appropriate use of Scientific Method	20%
Logical Interpretation of Data/Observations	20%
Conclusion and Final Recommendations	20%
Grammar, Spelling, Punctuation, Syntax and Format	10%
TOTAL	100%

Examination

The grading criteria for the final examination will be determined by the instructor, who will provide information to the student regarding the content and style of the exam.

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Recommended Course Schedule

The following schedule of activities has been provided as a general guide to the course. To ensure your success in the course, try to follow it as closely as possible.

Session	Topic and Assignment	Readings
1	Origins of Science Technology	Alioto, Introduction, pages 1-4; Chapter 1, pages 5-21; Chapter 2, pages 22-36. Carey, Chapter 1, pages 1-7.
2	Science and the Early Greeks	Alioto, Chapter 3, pages 37-55; Chapter 4, pages 56-72. Carey, Chapter 2, pages 8-28.
3	Science and Religious Beliefs DUE: Assignments 1 and 2	Alioto, Chapter 8, pages 117-127; Chapter 9, pages 128-136; Chapter 10, pages 137-146; Interlude, pages 162-166. Carey, Chapter 3, pages 35-56.
4	Humanism and Science DUE: Assignment 3	Alioto, Chapter 12, pages 167-177; Chapter 14, pages 194-207;
5	The Beginnings of Modern Science DUE: Assignment 4	Alioto, Chapter 13, pages 178-193; Chapter 15, pages 208-222.
6	Newton, Darwin, and God	Alioto, Chapter 16, pages 223-249; Chapter 20, pages 293-311. Asimov, "Those Crazy Ideas", pages 370-380. Darwin, "Understanding Natural Selection", pages 380-387.

7	Cosmology DUE: Assignments 5 and 6	Alioto, Chapter 25, pages 400-412. Carey, Chapter 4, pages 71-82. Koestler, "The 'Cosmic Mystery'", pages 403-409. Cedering, "Letter from the Astronomers", pages 409-412.
8	Biology DUE: Assignment 7	Alioto, Chapter 26, pages 413-430. Carey, Chapter 5, pages 89-107. O'Neill, Chapter 1, pages 34-59; Chapter 6, pages 252-269.
9	Review DUE: Assignment 8	Alioto, Epilogue, pages 431-443
10	Final Exam DUE: Assignment 9	

REMINDER: Please complete and return the Faculty Evaluation Form to the faculty development office during the final week of this course.

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