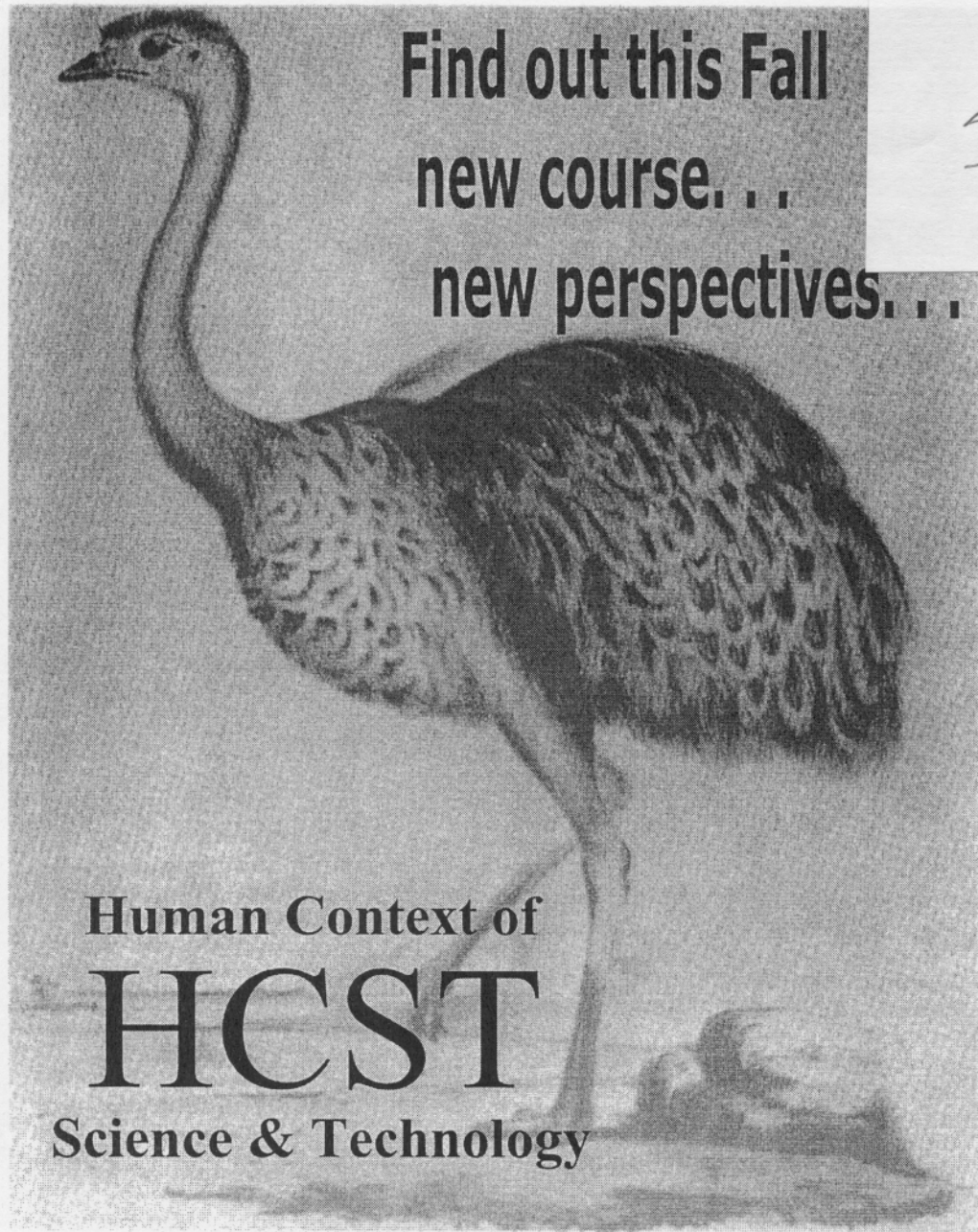


Charles Darwin's expedition  
party ate most of this Rhea  
before realizing its importance--  
is this any way to do research?

Find out this Fall  
new course. . .  
new perspectives. . .

S#22



Human Context of  
**HCST**  
Science & Technology

<http://www.umbc.edu/hcst>



**UMBC**  
AN HONORS  
UNIVERSITY  
IN MARYLAND

**April 16, 2001**

**Dear Faculty Advisor:**

**In the fall a new upper-level undergraduate certificate program will begin. It is entitled "The Human Context of Science and Technology." Its requirements are listed in the following pages.**

**The introductory course, HCST 100, will be offered for the first time this fall, on Mondays and Wednesdays 2:00-3:15 pm. The course carries Arts and Humanities GER credit and is open to all students interested in the role of science and technology in human culture. A fuller description of the course is on the reverse side of this page.**

**As you advise students this spring, we would appreciate your bringing this course to their attention.**

**Yours,**

**The Committee on "The Human Context of Science and Technology"**

**Sandra Herbert (History) Chair of the Committee  
Susan Blunck (Education)  
Thomas Field (MLL, Humanities Center)  
Ted M. Foster (Engineering)  
Barbara Kinach (Education)  
James McKusick (English)  
Carole McCann (American Studies)  
Jessica Pfeifer (Philosophy)  
Thomas N. Robinson, Jr. (Africana Studies, Psychology)  
Robert Rubinstein (Sociology/Anthropology)  
Philip Sokolove (Biology)  
Laszlo Takacs (Physics)  
Joseph N. Tatarewicz (History)  
John Titchener (Philosophy)  
L. D. Timmie Topoleski (Mechanical Engineering)  
Larry Wilt (Library)**

HCST Human Context of Science and Technology  
c/o UMBC Department of History AD 732  
[www.umbc.edu/hcst](http://www.umbc.edu/hcst)      [h\\_c\\_s\\_t@umbc.edu](mailto:h_c_s_t@umbc.edu)



## HCST 100

# The Human Context of Science and Technology

This course considers science and technology as the creations of human ingenuity. It asks such questions as:

- how is science done?
- what are the intentions behind human inventions?
- what values do science and technology represent?
- what are the ethical implications of advances in scientific and technical fields?

The content of the course comes from case studies of important scientific discoveries and technological innovations. On the biological side, the course will consider evolutionary and environmental topics. On the physical sciences side the course will draw from astronomy and physics. In engineering the course will focus on space technology and on other areas of work presently underway at UMBC.

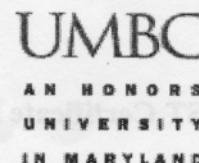
### Catalog Description

HIST 100 The Human Context of Science and Technology

(AH) Grade Method: REG/F-F/AUD GER: meets A/H GDR: meets H

In this course students explore interactions among the humanities, the sciences, and technology, including study of the sciences and technology using humanistic approaches, and the study of the effects of the sciences and technology on art, philosophy, and society. Students will have the opportunity to consider the role of human values in the pursuit of the sciences and in the invention and employment of various technologies. Practical social and political issues relating to science and technology will also be addressed.

**HCST 100 [2790] 0101 MW 2:00 pm - 3:15 pm (SS101) Herbert, Sandra & Sokolove, Philip**



## Human Context of Science and Technology

### *Course of Study for a 27 Credit Upper-Division Certificate Program*

This program is suitable for and accessible to students of all abilities, particularly those with serious interests in both the humanities and the sciences.

The program has a three-part structure composed of:

- (1) a required introductory course HCST 100 (3 hours)
- (2) electives chosen from a list of prescribed courses (15 hours), and
- (3) a natural science/technology component (9 hours minimum)

Students take a required introductory course, *HCST 100 Introduction to the Human Context of Science and Technology* (3 credits), and then, under faculty guidance, select electives from a list of humanities and social science courses dealing with science and technology (15 credits), and from a list of core courses in a particular scientific or technical field (9+ credits). In this way students gain a systematic introduction to the field, may study various subjects and approaches according to interest, and demonstrate serious engagement with one scientific or technical area. Many of the HCST electives can perform "double duty," also fulfilling general requirements and those of the student's major program. It is the student's responsibility to meet the appropriate prerequisites for any course within the program.

#### **(1) HCST 100 (3 credits)** (GER: meets A/H GDR: meets H)

In this course students explore interactions among the humanities, the sciences, and technology, including study of the sciences and technology using humanistic approaches, and study of the effects of the sciences and technology on art, philosophy, and society. Students will have the opportunity to consider the role of human values in the pursuit of the sciences and in the invention and employment of various technologies. Practical social and political issues relating to science and technology will also be addressed. The course will normally be taken within the first year or two of the student's enrollment at UMBC.

#### **(2) ELECTIVES (15 HOURS)**

A student in the HCST Certificate Program would take 5 of these courses, of which at least four would have to be at the upper level. Substitutions to this list can be approved by the Director of the Certificate Program. This course list will be subject to periodic revision.



## HCST Certificate Electives List:

AMST 270	American Culture and Science
AMST 388/ENGL 388	American Environment: Landscape and Culture
ANTH 312	Medical Anthropology
ENGL 200	Language and Scientific Value
ENGL 317/CPLT 317	Literature and the Sciences
ENGL 383	Science Writing
ENGL 418	Advanced Topics in Literature and the Sciences
ENGL 419	Seminar in Literature and the Sciences
GEOG 326	Conservation Thought
GEOG 432	Seminar in Natural Resources & Environmental Conservation
HIST 369	Darwinism: The Evolutionary Perspective
HIST 387	Medicine and Health Care in China
HIST 404/IFSM 404/CMSC 404	History of Computers & Computing
HIST 492	Colloquium in the History of Science
HIST 445	History of Science to 1700
HIST 446	History of Science since 1700
MATH 432	History of Mathematics
PHIL 248	Introduction to Scientific Reasoning
PHIL 358/HAPP 358	Ethical Issues in Health
PHIL 372	Philosophy of Science
PHIL 394	Philosophy of Biology
PHIL 472	Advanced Topics in the Philosophy of Science
PHYS 333	Applied Physics in Archeology and Art
SOCY 361	Science and Society
SOCY 416/ANTH	Cyberspace, Culture & Society
SOCY 457/HIST 450	Social History of American Medicine
WMST 378	Gender, Science, and Technology

### (3) NATURAL SCIENCE/TECHNOLOGY COMPONENT ( 9 HOURS MINIMUM)

In addition to studying critical literature about science and technology, students must become acquainted in some detail with current conceptions and practice in a chosen area of science or technology as presented by that area's current practitioners. The following options are currently available:

#### BIOLOGY OPTION

BIOL 100/100L	4 + 2	Concepts of Biology
BIOL 302	4	Molecular & Cellular Genetics

**CHEMISTRY OPTION**

CHEM 123/124/124L	4+3+2	Intro to General Organic & Biochemistry
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OR

CHEM 101/102/102L	4+3+2	Principles of Chemistry
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**COMPUTER SCIENCE OPTION**

CMSC 104	3	Problem Solving & Computer Programming
CMSC 201	4	Computer Science I for Majors
CMSC 202	4	Computer Science II for Majors
CMSC 203	3	Discrete Structures

**GEOGRAPHY & ENVIRONMENTAL SYSTEMS OPTION**

GEOG 110	3	Physical Geography
GEOG 111	3	Principles of Geology
GEOG 120	3	Environmental Science & Conservation

**INFORMATION SYSTEMS OPTION**

IFSM 202	3	Systems Analysis Methods
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AND two additional courses chosen from IFSM 125 or any IFSM course at the 200-level or above

**MATHEMATICS/STATISTICS OPTION**

MATH 151	4	Calculus & Analytic Geometry I
MATH 152	4	Calculus & Analytic Geometry II

AND either any 200-level MATH course or any 300-level STAT course

**PHYSICS OPTION**

PHYS 111/112	4+4+3	Basic Physics <u>and</u> any other course in the physical sciences
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OR

PHYS 121/122/122L	4+4+2	Introductory Physics
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**ENGINEERING SCIENCE OPTION**

ENES 110	3	Statics
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AND two of the following:

ENES 220	3	Mechanics of Materials
ENES 221	3	Dynamics
ENES 230	3	Intro to Materials & their Applications

**CHEMICAL ENGINEERING OPTION**

ENES 101	3	Introductory Engineering Science
CHEM 101/102/102L	4+3+2	Principles of Chemistry
ENCH 215	3	Chemical Engineering Analysis

**MECHANICAL ENGINEERING OPTION**

ENES 101	3	Introductory Engineering Science
ENME 204	3	Introduction to Engineering Design with CAD
ENES 220	3	Introductory Engineering Science

AND at least two more 3-credit courses in an engineering field, selected from the courses listed under the other engineering options. In exceptional cases, courses other than the ones listed may be accepted on the recommendation of the advisor, provided they are at a similar or higher level.



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This site is best viewed with Microsoft Internet Explorer  
Some elements may not display properly in Netscape

*Welcome* to the



Rapid advances in science and technology have become the hallmark of the present age. The challenge for today's university is to provide its students with the latest knowledge in science and technology while integrating that knowledge into a coherent view of the world. To do that requires an understanding of human nature and achievement drawn from the humanities as well as the sciences. It is the purpose of this new Undergraduate certificate program to enhance that goal.

Taking advantage of recent scholarship on the philosophy, history, and sociology of science and technology, and a faculty already engaged in these subjects, the Certificate in Human Context of Science and Technology provides undergraduates the opportunity to study systematically the interactions among the humanities, the physical and social sciences, and technology.

Our program faculty and staff hope you will find this subject as exciting and thought-provoking as do we.

Dr. Sandra Herbert, Department of History, Chair of the HCST Committee

<http://userpages.umbc.edu/~tatarewi/HCST/>

1/26/2003