

Human Context of Science and Technology

DIRECTOR

Joseph N. Tatarewicz
History

ADVISEMENT COORDINATOR

Faye Adams
History

HUMAN CONTEXT OF SCIENCE AND TECHNOLOGY COMMITTEE

Ted Foster
Engineering

Sandra Herbert
*Founding Director
History*

Jessica Pfeifer
Philosophy

Thomas Robinson
Psychology/Africana studies

Philip Sokolove
Biology

Lynn L. Sparling
Physics

Laszlo Takacs
Physics

G. Rickey Welch
*Biology/history
Director Honors College, ex officio
Director, Interdisciplinary Studies, ex officio
Director, The Drescher Center for the Humanities, ex officio*

This is a 27-credit, upper-division certificate program. It complements the student's major.

For students in the humanities and social sciences, the Human Context of Science and Technology (HCST) Certificate Program provides a core of foundational courses in one of the areas of science or engineering that will provide the technical background allowing them to integrate humanistic and scientific learning. The HCST Program provides students in the sciences and engineering with a broad-based education that will equip them to understand the cultural setting and societal impact of their future work.

To assist students in their future careers, whether in business, engineering, education, writing or in the arts, the HCST Certificate Program provides a bridge connecting the cultural life of the humanities and the sciences. In an era when individuals

change careers with some frequency, it also provides avenues into a number of different areas of knowledge.

The program has a three-part structure:

- 1) A required introductory course, HCST 100 (three hours)
- 2) Electives chosen from a list of prescribed courses (15 hours)
- 3) Natural science/engineering component (nine hours minimum)

I.) HCST 100 (3 credits)
(GFR: meets A/H, GDR: meets H)

II.) Electives (15 hours)

A student in the HCST Certificate Program would take five 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. For all courses, a grade of "C" or better is required.

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 and Environmental Conservation

HIST 369
Darwinism: The Evolutionary Perspective

HIST 387
Medicine and Health Care in China

HIST 404/IS 404/CMSC 404
History of Computers and 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 251/CMSC 304
Ethical Issues in Information Systems

PHIL 358/HAPP 358
Bioethics

PHIL 372
Philosophy of Science

PHIL 394
Philosophy of Biology

PHIL 395
Philosophy of Physics

PHIL 454
Animals and the Environment: Moral Theory and Its Applications

PHIL 472
Advanced Topics in the Philosophy of Science

PHYS 333
Applied Physics in Archaeology and Art

POLI 452
Politics of Health

SOCY 351
Medical Sociology

SOCY 352
Issues in Health Care

SOCY 361
Science and Society

SOCY 416/ANTH
Cyberspace, Culture and Society

SOCY 457/HIST 450
Social History of American Medicine

WMST 352
Women, Gender and
Information Technology

WMST 378
Gender, Science and
Technology

**III.) Natural science /
technology component
(nine 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 available:

Biology Option:

BIOL 100/100L [4+2]
Concepts of Biology

BIOL 302 [4]
Molecular and Cellular
Genetics

Chemistry Option:

CHEM 123/124/124L
[4+3+2]
Intro to General Organic
and Biochemistry

OR

CHEM 101/102/102L
[4+3+2]
Principles of Chemistry

Computer Science Option:

Three courses chosen from
the following:

CMSC 104 [3]
Problem-solving and
Computer Programming

CMSC 201 [4]
Computer Science I for
Majors

CMSC 202 [4]
Computer Science II for
Majors

CMSC 203 [3]
Discrete Structures

**Geography and
Environmental Systems**

Option:

GEOG 110 [3]
Physical Geography

GEOG 111 [3]
Principles of Geology

GEOG 120 [3]
Environmental Science and
Conservation

Information Systems Option:

IS 202 [3]
Systems Analysis Methods

AND Two additional courses
chosen from IS 125 **OR ANY**
IS courses at the 200 level
or above.

Mathematics / Statistics

Options:

MATH 151 [4]
Calculus and Analytic
Geometry I

MATH 152 [4]
Calculus and 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 and any
other course in the
physical sciences

OR

PHYS 121/122/122L
[4+4+2]
Introductory Physics

**Chemical and Biochemical
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]
Mechanics of Materials

General Engineering Option

ENES 101 [3]
Introductory Engineering
Science

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