

The Senate of Michigan Technological University

PROPOSAL 4-89

CERTIFICATE PROGRAM IN INTERNATIONAL TECHNOLOGY AND SOCIETY

Department of Social Sciences

PROPOSAL STATEMENT:

The Senate of Michigan Technological University recommends that the Department of Social Sciences offer a Certificate in International Technology and Society.

Students at Michigan Technological University preparing to work in scientific and technical careers increasingly will be expected to understand the complex interactions of technology and society, including the nature of global markets, competition, and technological change. Attention to this international perspective has attracted much attention across the country, but developing a more global view requires a grasp of technological developments in the society that surrounds them. Without such a foundation, meaningful comparisons to other nations and regions of the world cannot be drawn. By awarding a "Certificate in International Technology and Society" the University can encourage students to make more effective use of their liberal arts and social sciences electives, focusing their attention on a technology studies program that includes attention to the international dimensions of contemporary technological developments.

BACKGROUND:

The Department of Social Sciences has focused for some years on developing a more effective and meaningful role in the education of engineers and other scientific and technical professions at Michigan Tech. To this end, it initiated an STS [Society and Technology Studies] program to enable students to better understand the complex interactions between technology, society, and its institutions. More recently [March 1987], the department commissioned a consultation by Albert Teich, Head of the Office of Public Sector Programs for the American Association for the Advancement of Science, to discuss strengthening the technology policy thrust of the STS program. The certificate proposal follows directly from these two initiatives, for it is designed to extend the department's abilities in technology studies to include a more global, international perspective. Indeed, the department has always recognized international concerns in its course offerings, but formally recognizing and strengthening the study of international technology and society in the Department of Social Sciences is a logical addition.

CERTIFICATE GOALS:

This certificate helps meet a need which educators at Michigan Tech and elsewhere see as an important priority: making students look beyond American boundaries during their undergraduate education. The department's present capabilities in technology studies provide a logical base from which students can pursue interests in international developments. Indeed, adding international concerns to the department's existing focus on the social, cultural, historical, economic, and political aspects of technological change has the primary virtue of providing a coherent agenda for the student interest in international questions. Moreover, attention to international technology and society relates directly to the training of most Michigan Tech students. Ideally, these students will develop a thorough understanding of the political, economic, social, and other aspects of technological development by comparing the society in which they live with developments elsewhere in the world.

CERTIFICATE CONTENT:

In this certificate, students will examine the international dimensions of technology studies, not the technological dimensions of international studies. The department's previous efforts in STS, designed to inform students of the sociocultural, political, historical, and policy aspects of technology and technological change, provide the foundation for study of many contemporary technological aspects of the international scene. It is the intellectual framework of technology studies that separates this plan from more traditional efforts in International Studies, which place the emphasis on foreign language and culture studies, as in MTU's Foreign Language and Area Studies Certificate Program. The certificate envisioned by the Department of Social Sciences will build a foundation for students in two areas -- the socio-cultural and political dimensions of technological change and the historic context of technology, primarily in American society. On this base, students can then acquire a comparative understanding of the international aspects of technology studies, with special attention to policy questions. In short, the certificate will encourage student interest in global issues directly related to their own careers and professions, guided by a framework supplied by technology studies, through comparison with American society.

SPECIFIC COURSE REQUIREMENTS:

30 credits distributed in the areas as outlined below.

I. Fundamentals of Social and Technical Change [16 credits]

To provide an understanding of the nature of cultures and society, how they operate and interact, and to provide a basis for studying the social and cultural conditions which influence industrial and technological growth (6 credits to be selected from the following courses -- either SS 161 or SS 232 MUST be included):

- SS 161 Science, Technology, & Society: Impacts & Interrelationships
- SS 171 Introduction to Anthropology
- SS191 Introduction to Sociology
- SS 232 Government, Science, and Technology
- SS 394 Industry and Society
- SS252 Ethics and Technology
- BA 419 Economics of Technological Change

II. The Social Content of Technology [6 credits]

To provide an understanding of the myriad social and technological factors that influence industrialization, the diffusion of technology, and international competition. (6 credits: 3 credits from list A [historical context of technology], 3 credits from list B [technology and society in the twentieth century]):

- A (historical context of technology)
 - SS 260 Technology and Western Civilization
 - SS 357 Industrialization of America
 - SS 383 Technological Revolutions and the Rise of Civilization

- B (technology and society in the twentieth century)
 - SS 265 Automobile in America
 - SS 266 Technology, Society, & Social Conflict in Modern America
 - SS 365 American Business & Technology Since 1890
 - BA 479 Management of Technology

III. International Technology Studies Core Courses [9 credits]

Courses focusing on contemporary international dimensions of technology (9 credits to be selected from the following courses):

- SS 143 World Resources and Development
- SS 333 Current International Tensions*
- SS 341 Introduction to Comparative Government and Politics*
- SS 350 Industry and Manufacturing in the World Economy
- SS 366 Controlling Technology (Comparative Government Regulation)
- SS 371 Technological Change in Developing Societies
- SS 443 Economic Development and Growth

*Are being altered to focus more strongly on technology issues

IV. Approved International Electives [6 credits]

To be selected from an approved list including foreign language and literature, intercultural communications, international economics, and international management.

V. Senior Project/Independent Study [3 credits]

SS440: International Technology Studies (3 credits)*

Capstone of the certificate. Senior year directed study or seminar. Student will prepare a research paper focusing on a particular international technology studies topic, drawing together concepts and knowledge introduced in previous International Technology Studies courses.

*proposed new course

COSTS:

Present faculty in Social Sciences can provide complete coverage of Areas I and II, since they fall within the core of the department's existing strength. Area III is inadequately staffed at present. Several of the courses are taught on an alternate year basis or irregularly by part-time faculty. The department intends to strengthen these offerings by modifying several existing courses and perhaps adding one or two new ones.

A strong certificate which truly merits the title "International Technology and Society" requires that the Social Sciences Department have a core faculty with research and teaching interests directly related to international technology issues. The addition of one new faculty member in the international technology studies area in 1989-90 will begin to help us address this problem. But it is imperative that we hire two additional faculty over the next two years so that the department has faculty numbers in international technology issues somewhat comparable to our current strengths in domestic topics.

ADMINISTRATION:

One member of the Social Sciences Department faculty will be appointed by the Head of that department to administer the program.

AWARDING THE CERTIFICATE:

Michigan Technological University will award the certificate to students who have earned a minimum 2.5 grade point average in the specific course requirements. The certificate will be noted on each student's transcript.

Adopted by Senate: 26 April 1989

Supported by Administration: 3 May 1989