

University of Arkansas, College of Education and Health Professions
REHABILITATION, HUMAN RESOURCES, AND COMMUNICATION DISORDERS

I. Program Affiliation: Vocational Education, Technology Education concentration

Course Number and Title: TEED 2103: Technology & Society

Catalog Description: An examination of the complex relationships between society, values, and technological development in developed and under-developed nations.

Prerequisite: None

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II. Relationship to knowledge Base:

This foundational course supports the “Specialty Studies” component of the Scholar-Practitioner model by providing the technology teacher education candidate with knowledge and tools needed to explore the complex relationships between humans, knowledge and skills, and technological development or proliferation. Few elements in our contemporary society are as pervasive as is technology. Technology has often been considered an engine of social change. In this course, students will examine the interface between technology and society. The ability to foresee the social, personal, economic and environmental consequences of technology development and use will be addressed.

III. Goal:

This course is designed to provide the candidate with a foundational understanding of the complex relationships between technology, societies, politics, economics, and values.

IV. Competencies:

Upon successful completion of this course, students will demonstrate knowledge, skills and competencies in the following areas:

1. Describe the social, cultural, political, economic, geographic, and psychological contexts that impact living in a technological world (SP 1) (PW: A, B);
2. Explain the socio-cultural elements that determine the quality of life in technocratic societies (SP 1) (PW: A, B);
3. Analyze the role of technology in the development, success, and dilemmas of rural and urban societies in this nation and others (SP 1, 3) (PW: A, B);
4. Describe the nature of historical and current social resistance to technological change (SP 1, 3, 4) (PW: A, B);

5. Critique the evolutionary process of technology and its impact of society, culture, politics, and the media (SP 1, 3, 4) (PW: A);
6. Explain the socio-psychological dimensions of work and the role of technology in precipitating major changes in the nature of work (SP1, 3) (PW: A, B);
7. Explain the complex dynamics which produce and shape social outcomes of technology (SP 3) (PW: A, B);
8. Demonstrate the use of the "sociological imagination" as the organizing device to identify patterns of social organization, social structure, and social institutions that define living in a technological world (SP 1, 6) (PW: A, B), and;
9. Demonstrate the ability to complete and "appropriate technological" problem solving scenario which attempts to solve a social problem in an under-developed region of the United States or another nation (SP 2, 3, 5, 7) (PW: A, B).

V. Content:

1. Technological Interfaces

- a. Rural America (PW: A, B)
 1. Technology: A natural process
 2. Resistance to change
 3. Creativity and innovation
- b. Development of agriculture and rural America (PW: A, B)
 1. Capital, mechanization
 2. The railroad as catalyst for change
 3. Specialization, selective breeding, fertilizer, and oil dependency
 4. Developing technologies: biotechnology and genetic engineering, global positioning and selective applications, etc.
- c. Rural America in transition: social and cultural change issues (PW: A, B)
 1. Diminishing population and increasing farm size
 2. Economic diversity: rural poor to successful farmers
 3. Rural mentality: collectivism to individualism
 4. The decline of the family farm
 5. Power and control: Independence to increasing dependence
 6. Shifting gender stereotypes/roles?
 7. Environmental issues, such as soil preservation and ground water pollution
 8. Global needs, domestic price stability, and politics (exports, imports, tariffs, and subsidies, etc.)
 9. The social consequences of the demise of the rural community
 10. The concept of progress and agriculture in other cultures
- d. Urban and suburban cultures (PW: A, B)
 1. The cause and effect of technology and society
 2. Historical development: the city and the fabric of society
 3. The importance of resources

4. Transportation and communication
 5. Diversity of culture; the development of the arts
 6. Early city design
- e. Technologies crucial to the development of the modern city (PW: A, B)
1. Transportation
 2. Communication
 3. Infrastructure and utilities
 4. Systems and the occasion for normal accidents
 5. Skyscrapers
 - a. Early barriers to height, solutions
 - b. Competition for the sky: monuments to the male ego?
- f. Emerging urban patterns: social dynamics and the role of technology
1. Suburbs to megaburbs
 2. Beltways and the growth of commercial centers away from the core
 3. City planning
 4. Technology and the reversal of urbanization in the U.S.
 5. The influence of technology on urban culture
 6. The concept of progress
- g. Urban issues and trends: developing countries and America
1. Power and control
 2. Socialization and isolation in the city:
 3. Poverty and distribution of resources
 4. Social stratification
 5. Housing
 6. Crime
 7. Transportation
 8. Environmental issues unique to the urban environment
 9. Strategies for modifying the urban environment; revitalizing the city core
- h. The media and society (PW: A)
1. Historical perspective: the printing press: economic, social, political, religious, psychological, and cultural consequences; precursor of mass communication
 2. 20th century technologies: technology as mediator
 - a. Television
 - i. Controversial issues: the good, the bad, and the ugly: stimulating violence; accommodating a passive lifestyle
 - ii. Shaping world views
 - iii. Shaping personal values, beliefs, and self-image
 - iv. Influencing the political process
 - b. Internet, the Web, and virtual reality
 - i. Communication
 - ii. Does information equal knowledge
 - iii. Is the Internet the equalizer in society
 - iv. "A chip in every product;" will it change society?
 3. Environmental issues: noise and information overload
 4. The concept of progress
 5. Power and control: who controls the media?

- i. Social/technological transformations
 1. Agriculture to manufacturing to service sector
 2. Technology - a major force of change
 3. Increased use of automation
 4. Globalization of business
 - a. The technologies
 - b. Effect on under-developed and developing countries
 - c. The major players
 - d. The green revolution
 5. The questions of power and control
- j. Technology and the concept of progress

2. Solving problems with technology (PW: A, B,)

- a. Technological problem solving
- b. The design loop
 1. problem identification
 2. problem clarification
 3. ideation
 4. Drawing, sketching, and designing solutions
 5. Solution implementation
 6. Testing and evaluation
 7. Communicating results

3. Appropriate technology (PW: A, B)

- a. Concepts and definitions
- b. Goals, theories and history of appropriate technology
- c. Introduction to the literature of appropriate technology
- d. Appropriate technology in developing regions
- e. Photovoltaics and pedal-power
- f. Agriculture and shelter technologies
- g. Impacts, culture, and society
- h. Sustainability and nationalism
- i. Model and prototype development

VI. Evaluation:

Grades for participating students will be calculated based on completion of the following assignments and activities:

- **Class Attendance and Participation:** Students are expected to come to every class and participate in all discussions and activities (**100 points**).
- **Reading Questions #1-15 (PW: A, B):** Students are required to respond to questions from various reading assignments throughout the course of the semester (**10 points each/150 total**).
- **Handout Analysis Questions #1-2 (PW: A, B):** Students are required to respond to questions from two handout papers during the course of the semester (**10 points each/20 total**).
- **Video Reviews #1-6:** Students are required to respond to questions concerning six video presentations during the course of the semester (**10 points each/60 total**).

- **Oral History Assignment (PW: A):** Students will complete an oral history assignment documenting historical facts concerning technology and sociology **(20 points)**
- **The More Things Change(PW: A):** Students will document the evolution and impact of technological development in the United States **(20 points)**.
- **The origins of technology Assignment** (PW: A, B): To be discussed in class **(20 points)**
- **Technology Assessment (PW: A, B):** Students will complete a brief 3-5 page paper describing the impacts of a given technological device or system and develop appropriate technology solutions for a given culture or society. The paper should describe the technology (e.g., cloning of sheep) and then identify and discuss the implications for individuals and society. Also, students will describe the extent to which society and cultural values have made it possible for the technology to be developed and have shaped the technology **(100 points)**
- **Course Examinations (PW: A, B, C, D):** Students will complete two course examinations (including the final examination **(200 points)**).

VII. Syllabus Change

The instructor reserves the right to make changes as necessary to this syllabus. If changes are made, advance notification will be given to the class.

VIII. Grading Scale

The following scale will be used to determine the final grade in the course:

| <u>Final Percentage</u> | <u>Final Grade</u> |
|-------------------------|--------------------|
| 91% - 100% | A |
| 81% - 90% | B |
| 75% - 80% | C |
| 70% - 74% | D |
| Below 70% | F |

IX. Academic Honesty

The application of the University of Arkansas Academic Honesty Policy, as stated in the Student Handbook will be fully adhered to in this course. Grades and degrees earned by dishonest means devalue those earned by all students; therefore, it is important that students are aware of the University of Arkansas Academic Honesty Policy. Academic dishonesty involves acts which may subvert or compromise the integrity of the education process.

X. Accommodations

Students with disabilities requesting reasonable accommodations must first register with the Center for Students with Disabilities. The CSD is located in the Arkansas Union, room 104 and on the web at: <http://www.uark.edu/ua/csd/applications.htm>. The CSD provides documentation to students with disabilities who must then provide this documentation to their course instructors. Students with disabilities should notify their course instructors of their need for reasonable accommodations in a timely manner to ensure sufficient time to arrange reasonable accommodation implementation and effectiveness. A typical time frame for

arranging reasonable accommodations for students who are registered with the CSD is approximately one to two weeks.

XI. Classroom Behavior

Appropriate classroom behavior is expected of the instructor and all students. Inappropriate and disruptive classroom behavior (inappropriate language and gestures, class disruptions, disrespect to other students or instructor, and other behavior as determined by the instructor) will not be tolerated and will result in possible removal from the class and /or disciplinary action as per the student handbook.

XII. Inclement Weather

In case of inclement weather, students should phone 575-4758 if they are unsure if the class will meet. In addition, information concerning University closings can be obtained by phoning 575-2000 for announcements. University closing announcements are also made on KUAF Radio, 91.3 as well as local radio and television stations. The University's inclement weather site is updated frequently on both UARKINFO and University Online at <http://pigtrail.uark.edu/info/weather.nclk>.

XIII. Course Resources

In addition to the University library, guest speakers, and journal articles distributed by the professor, the following reference materials will be used extensively:

Alcorn, P. (2003). *Social issues in technology: A format for investigation* (4th Ed.). Upper Saddle River, NJ: Prentice Hall (ISBN 0130602574)

Brown, D. (1996). *The case study: A tool to teach the impacts of technology. Selected Readings in Technology Education*. Reston, VA: International Technology Education Association.

Cowen, S. S. (1997). *A social history of American technology*. New York: Oxford University Press

Custer, R.L. (1995). Examining the dimensions of technology. *Journal of Design and Technology Education*, 5, 219-244.

Davis, M. (1998). *Thinking like an engineer*. New York: Oxford University Press.

Evan, W. M. & Manion, M. (2002). *Minding the machines*. Upper Saddle River, NJ: Prentice Hall PTR.

Hjorth, L. S. , Eichler, B. A., Khan, A. S., & Morello, J. A. (2003). *Technology and society: A bridge to the 21st Century*. Upper Saddle River, NJ: Prentice Hall

Karwatka, D. (1999). *Technology's Past*. AnnArbor, MI: Prakken Publications, Inc.

Markert, L., & Backer, P. (2003). *Contemporary technology: Innovations, issues, and perspectives* (4th Ed.). Tinley Park, IL: The Goodheart-Willcox Company, Inc. (ISBN 1566379822)

McKenna, A., & Agogino, A. (2001). *Integrating Design, Analysis, and Problem Solving in an Introduction to Engineering Curriculum for High school Students*, Retrieved September 10, 2002, from the World Wide Web:
<http://www.asee.org/conferences/98conf/00308.pdf>

National Academy of Engineering. (2002). *Technically speaking: Why all Americans need to know more about technology*. Washington, DC: Author.

Schumacher, E. F. (1973). *Small is beautiful*. New York: Harper & Row.

Susskind, C. (1973). *Understanding Technology*. London: The John Hopkins University Press.

Waetjen, W. B. (1991). *Technology and human behavior*. Reston, VA: Technology Education Advisory Council.

IX. Research Base

Required Texts

Wicklein, R.C. (Ed.) (2001). *Appropriate technology for sustainable living: The 50th Yearbook of the Council on Technology Teacher Education*. Peoria, IL: Glencoe Macmillan/McGraw-Hill.

International Technology Education Association. (2000). *Standards for technological literacy: Content for the study of technology*. Reston, VA: Author.