

PURDUE UNIVERSITY

REQUEST FOR ADDITION, EXPIRATION,  
OR REVISION OF A GRADUATE COURSE  
(50000-60000 LEVEL)

Print Form

Office of the Registrar  
FORM 40G REV. 7/08

DEPARTMENT CILT

EFFECTIVE SESSION Spring 2010

INSTRUCTIONS: Please check the items below which describe the purpose of this request.

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> 1. New course with supporting documents (complete proposal form) | <input type="checkbox"/> 7. Change in course attributes              |
| <input type="checkbox"/> 2. Add existing course offered at another campus                            | <input type="checkbox"/> 8. Change in instructional hours            |
| <input type="checkbox"/> 3. Expiration of a course   | <input type="checkbox"/> 9. Change in course description             |
| <input type="checkbox"/> 4. Change in course number  | <input type="checkbox"/> 10. Change in course requisites             |
| <input type="checkbox"/> 5. Change in course title   | <input type="checkbox"/> 11. Change in semesters offered             |
| <input type="checkbox"/> 6. Change in course credit/type   | <input type="checkbox"/> 12. Transfer from one department to another |

PROPOSED:

EXISTING:

TERMS OFFERED  
Check All That Apply:

Subject Abbreviation TECH

Subject Abbreviation \_\_\_\_\_

Summer  Fall  Spring

Course Number 56300

Course Number \_\_\_\_\_

CAMPUS(ES) INVOLVED

Long Title History, trends, and limitations of technology

Short Title \_\_\_\_\_

Calumet  N. Central  
 Cont Ed  Tech Statewide  
 Ft. Wayne  W. Lafayette  
 Indianapolis

Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)

CREDIT TYPE

1. Fixed Credit: Cr. Hrs. 3
2. Variable Credit Range:  
Minimum Cr. Hrs. \_\_\_\_\_  
(Check One) To  Or   
Maximum Cr. Hrs. \_\_\_\_\_
3. Equivalent Credit: Yes  No
4. Thesis Credit: Yes  No

COURSE ATTRIBUTES: Check All That Apply

1. Pass/Not Pass Only
2. Satisfactory/Unsatisfactory Only
3. Repeatable
4. Credit by Examination
5. Special Fees
6. Registration Approval Type  
Department  Instructor
7. Variable Title
8. Honors
9. Full Time Privilege
10. Off Campus Experience

Schedule Type	Minutes Per Mtg 160	Meetings Per Week 1	Weeks Offered 16	% of Credit Allocated 100
Lecture				
Recitation				
Presentation				
Laboratory				
Lab Prep				
Studio				
Distance				
Clinic				
Experiential				
Research				
Ind. Study				
Pract/Observ				

Cross-Listed Courses

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):

Students will learn the fundamental concepts in engineering and technology education. This includes knowledge of information and communication systems, constructions, manufacturing processes, energy/power/transportation technologies, and the overall impact of individuals on the environment within the context of society. This course will develop the philosophy and nature of technology as an education discipline. The course will cover an overview of the importance of technology in history. Students will also learn the limitations and scope which impacts the field of engineering technology.

Calumet Department Head _____ Date _____	Calumet School Dean _____ Date _____	Calumet Undergrad Curriculum Committee _____ Date _____
Fort Wayne Department Head <u>Charles Feldman</u> <u>8/19/09</u>	Fort Wayne School Dean <u>David A. ...</u> <u>9/8/09</u>	Fort Wayne Chancellor _____ Date _____
Indianapolis Department Head _____ Date _____	Indianapolis School Dean _____ Date _____	Undergrad Curriculum Committee _____ Date _____
North Central Department Head _____ Date _____	North Central Chancellor _____ Date _____	Date Approved by Graduate Council _____
West Lafayette Department Head _____ Date _____	West Lafayette College/School Dean _____ Date _____	Graduate Council Secretary _____ Date _____
Graduate Area Committee Convener _____ Date _____	Graduate Dean _____ Date _____	West Lafayette Registrar _____ Date _____

OFFICE OF THE REGISTRAR

Supporting Document for a New Graduate Course

**To:** Purdue University Graduate Council  
**From:** Faculty Member: Charlie Feldhaus  
Department: CILT  
Campus: Indianapolis  
**Date:** 8/17/2009  
**Subject:** Proposal for New Graduate Course-Documentation  
Required by the Graduate Council to Accompany  
Registrar's Form 40G

For Reviewer's comments only  
(Select One)

Reviewer:

Comments:

**Contact for information if questions arise:** Name: Charlie Feldhaus  
Phone Number: 317-278-1863  
E-mail: cfeldhau@iupui.edu  
Campus Address: ET 309F

Course Subject Abbreviation and Number: TECH 56300

Course Title: History, trends, and limitations of technology

**A. Justification for the Course:**

- Provide a complete and detailed explanation of the need for the course (e. g., in the preparation of students, in providing new knowledge/training in one or more topics, in meeting degree requirements, etc.), how the course contributes to existing fields of study and/or areas of specialization, and how the course relates to other graduate courses offered by the department, other departments, or interdisciplinary programs.
- Justify the level of the proposed graduate course (50000- or 60000-level) including statements on, but not limited to: (1) the target audience, including the anticipated number of undergraduate and graduate students who will enroll in the course; and (2) the rigor of the course.

**B. Learning Outcomes and Method of Evaluation or Assessment:**

- Describe the course objectives and student learning outcomes that address the objectives (i.e., knowledge, communication, critical thinking, ethical research, etc.).
- Describe the methods of evaluation or assessment of student learning outcomes. (Include evidence for both direct and indirect methods.)
- Grading criteria (select from dropdown box); include a statement describing the criteria that will be used to assess students and how the final grade will be determined.

**Criteria**

- Identify the method(s) of instruction (select from dropdown box) and describe how the methods promote the likely success of the desired student learning outcomes.

**Method of Instruction**

**C. Prerequisite(s):**

- List prerequisite courses by subject abbreviation, number, and title.
- List other prerequisites and/or experiences/background required. If no prerequisites are indicated, provide an explanation for their absence.

**D. Course Instructor(s):**

- Provide the name, rank, and department/program affiliation of the instructor(s).
- Is the instructor currently a member of the Graduate Faculty?  Yes  No  
(If the answer is no, indicate when it is expected that a request will be submitted.)

**E. Course Outline:**

- Provide an outline of topics to be covered and indicate the relative amount of time or emphasis devoted to each topic. If laboratory or field experiences are used to supplement a lecture course, explain the value of the experience(s) to enhance the quality of the course and student learning. For special topics courses, include a sample outline of a course that would be offered under the proposed course.

**F. Reading List (including course text):**

- A primary reading list or bibliography should be limited to material the students will be required to read in order to successfully complete the course. It should not be a compilation of general reference material.
- A secondary reading list or bibliography should include material students may use as background information.

**G. Library Resources**

- Describe the library resources that are currently available or the resources needed to support this proposed course.

**H. Example of a Course Syllabus** (While not a necessary component of this supporting document, an example of a course syllabus is available, for information, by clicking on the link below, which goes to the *Graduate School's Policies and Procedures Manual for Administering Graduate Student Programs*. See Appendix K.)

[http://www.gradschool.purdue.edu/downloads/Graduate\\_School\\_Policies\\_and\\_Procedures\\_Manual.pdf](http://www.gradschool.purdue.edu/downloads/Graduate_School_Policies_and_Procedures_Manual.pdf)

## Supporting Document

# **TECH 56300 History, Trends, and Limitations of Technology**

### **Description**

Students will learn the fundamental concepts in engineering and technology education. This includes knowledge of information and communication systems, construction, manufacturing processes, energy/ power/ transportation technologies, and the overall impact of individuals on the environment within the context of society. This course will develop the philosophy and nature of technology as an education discipline. The course will cover an overview of the importance of technology in history. Students will also learn the limitations and scope which impacts the field of engineering technology.

### **A. Justification for the Course:**

This course contains an important breath of topics required for all technology teachers certified by the ITEA standards. Teachers in engineering technology education need to cover many different trades and industries and understand the fundamentals of the overall discipline. Teachers are expected to teach on a wide range of topics and integrate subject matter from other disciplines such as math and science.

### **B. Learning Outcomes and Method of Evaluation or Assessment:**

#### Course Objectives-

1. Discuss the characteristics and scope of technology.
2. Discuss the relationships between technology and social, cultural, political, and economic systems.
3. Discuss the importance of significant technological innovations on the history of human kind.
4. Discuss the role of society in the development and use of technology.
5. Discuss the relationship among technologies and the connections between technology and other disciplines.
6. Complete an electronic portfolio that follows the criteria of their state induction.
7. Describe the proper procedures for planning and managing a technology education laboratory.
8. Develop techniques for planning and organizing laboratory tools, supplies, and equipment for efficient and educationally sound laboratory operation.
9. Develop a realization of the importance of safety in technology education facilities and become familiar with prescribed methods of rendering facilities safe for student activities.
10. Perform a facility safety inspection, identifying hazards and noting methods of abatement.

11. Develop an awareness of government requirements and mandates, as they relate to the technology education laboratory.
12. Develop systems for inventory, purchase, and maintenance of equipment and supplies for an instructional facility.
13. Design a technology education laboratory.
14. Describe the disciplines that comprise career and technical education and their interrelationship.
15. Define terms associated with the field of technology education.
16. Identify and describe the major historical events that influenced both career and technical education, and technology education.
17. Identify professional associations and journals in the field of technology education.
18. Describe Purdue University's degree requirements for technology education.
19. Describe Indiana's certification requirements for technology education.
20. Develop and demonstrate a scene of professionalism.
21. Discuss the role of technology education in today's and tomorrow's educational systems.
22. Discuss trends and issues related to the field of technology education.
23. Compile an initial professional teaching portfolio.

These objectives meet ITEA Standards 1, 2, 3, 4, 5, 6, 7, 8, and 9.

### Evaluation

#### **Grading Standards**

Letter grades will be assigned in accordance with the following scale:

- 100% to 98 = A+
- 97.99 to 93 = A
- 92.99 to 91 = A-
- 90.99 to 88 = B+
- 87.99 to 83 = B
- 82.99 to 81 = B-
- 80.99 to 78 = C+
- 77.99 to 73 = C
- 72.99 to 70 = C-
- 70 and lower = F

#### **Evaluation Method**

Your grade for the course will be determined by the following items:

1. Papers, Presentations, and Other Assignments (25% of Final Grade)
  - Trends and history of Technology Presentation
  - Position Paper Trends limitations and history of Technology
2. Quizzes and exams (30% of Final Grade)
3. Evaluation Materials (a notebook) (15% of Final Grade)

- Technology education Evaluation Resources
4. Technology education trends Resources Materials (organized into files) (15% of Final Grade)
    - a. Trends in Construction Technology
    - b. Trends in Design Technology (including parametric modeling)
    - c. Trends in Manufacturing Technology (including computer-numerical-controlled machining)
    - d. Trends in Power and Energy (including digital electronics)
    - e. Trends in Transportation Technology
  5. Literature Review (15% of Final Grade)
    - 10-15 Pages in Length

**C. Prerequisite(s):**

Graduate status in the School of Engineering and Technology

**D. Course Instructor(s):**

Charlie Feldhaus Associate Professor: Department of Organizational Leadership and Supervision  
 Phone: 317-278-1863  
 Office: ET 309F  
 E-mail: cfeldhau@iupui.edu

**E. Course Outline:**

Students will learn the fundamental concepts of the trends in Engineering and Technology Education including knowledge of information and communication, construction, manufacturing, energy/power/transportation technologies, and the impact of the areas on individuals, the environment, and society. The course will develop the philosophy and the nature of technology as an education discipline. The course will overview the importance of technology in history and describes the different limitations that impact the scope of technology. Students will investigate professional educational issues in career and technical education, and in particular technology education. Emphasis will focus on certification, employment opportunities, terminology, publications, resources, historical development, and introduction to trends, philosophies, methods, and contemporary programs. Field trips are required to educational programs.

Week	Topic
1	Fundamental concepts of the trends in Engineering and Technology Education
2	Knowledge of information and communication
3	Construction, manufacturing
4	Energy/power/transportation technologies
5	Impact of the areas on individuals, the environment, and society.
6	Different limitations that impact the scope of technology

7	Investigate professional educational issues
8	Peer Teaching of Databases & Presentation Software
9	Safety in technology education
10	Government requirements and mandates
11	Inventory, purchase, and maintenance of equipment and supplies for an instructional facility
12	Field trip
13	Field trip
14	Sponsoring Student Organizations
15	Wrap-Up—Professional Issues (Getting a Job)

### F. Reading List (including course text):

- Storm, G, (1998). *Managing the Occupational Education Laboratory*. Ann Arbor, MI: Prakken.
- International Technology Education Association, (2000). *Standards for Technological Literacy: Content for the Study of Technology*. Reston, VA: Author.
- Campbell, D.M. & Cignetti, P.B. (2000). *How to Develop a Professional Portfolio: A Manual for Teachers*. Boston: Allyn & Bacon.

### G. Library Resources

Students will be required to complete a literature review. Journal articles & other necessary media can be found at the University Library at IUPUI.

### H. Example Course Syllabus

See attached.

## **I. HEADER:**

Course Number: TECH 56300

Course Title: History, trends, and limitations of technology

Instructor: Charlie Feldhaus

Prerequisites: Graduate status in the School of Engineering and Technology

## **II. COURSE DESCRIPTION AND RATIONALE:**

### **Description**

Students will learn the fundamental concepts in engineering and technology education. This includes knowledge of information and communication systems, construction, manufacturing processes, energy/ power/ transportation technologies, and the overall impact of individuals on the environment within the context of society. This course will develop the philosophy and nature of technology as an education discipline. The course will cover an overview of the importance of technology in history. Students will also learn the limitations and scope which impacts the field of engineering technology.

### **Rationale**

This course contains an important breath of topics required for all technology teachers certified by the ITEA standards. Teachers in engineering technology education need to cover many different trades and industries and understand the fundamentals of the overall discipline. Teachers are expected to teach on a wide range of topics and integrate subject matter from other disciplines such as math and science.

## **III. EDUCATIONAL OBJECTIVES:**

1. Discuss the characteristics and scope of technology.
2. Discuss the relationships between technology and social, cultural, political, and economic systems.
3. Discuss the importance of significant technological innovations on the history of human kind.
4. Discuss the role of society in the development and use of technology.
5. Discuss the relationship among technologies and the connections between technology and other disciplines.
6. Complete an electronic portfolio that follows the criteria of their state induction.
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21. Discuss the role of technology education in today's and tomorrow's educational systems.
22. Discuss trends and issues related to the field of technology education.
23. Compile an initial professional teaching portfolio.

#### **IV. COURSE CONTENT:**

Students will learn the fundamental concepts of the trends in Engineering and Technology Education including knowledge of information and communication, construction, manufacturing, energy/power/transportation technologies, and the impact of the areas on individuals, the environment, and society. The course will develop the philosophy and the nature of technology as an education discipline. The course will overview the importance of technology in history and describes the different limitations that impact the scope of technology. Students will investigate professional educational issues in career and technical education, and in particular technology education. Emphasis will focus on certification, employment opportunities, terminology, publications, resources, historical development, and introduction to trends, philosophies, methods, and contemporary programs. Field trips are required to educational programs.

#### **V. REQUIRED AND RECOMMENDED TEXTS:**

- Storm, G. (1998). *Managing the Occupational Education Laboratory*. Ann Arbor, MI: Prakken.
- International Technology Education Association, (2000). *Standards for Technological Literacy: Content for the Study of Technology*. Reston, VA: Author.
- Campbell, D.M. & Cignetti, P.B. (2000). *How to Develop a Professional Portfolio: A Manual for Teachers*. Boston: Allyn & Bacon.

## **VI. EVALUATION AND GRADING:**

### **Grading Standards**

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2. Quizzes and exams (30% of Final Grade)
3. Evaluation Materials (a notebook) (15% of Final Grade)
  - Technology education Evaluation Resources
4. Technology education trends Resources Resource Materials (organized into files) (15% of Final Grade)
  - Trends in Construction Technology
  - Trends in Design Technology (including parametric modeling)
  - Trends in Manufacturing Technology (including computer-numerical-controlled machining)
  - Trends in Power and Energy (including digital electronics)
  - Trends in Transportation Technology
5. Literature Review (15% of Final Grade)
  - 10-15 Pages in Length

## **VII. BIBLIOGRAPHY**

## **VIII. CHEATING AND PLAGIARISM**

Indiana University has adopted a code that applies, with only minor differences, to students on all Indiana University campuses. The code, which is available in the Office of the Dean of Students and in all school office, spells out what constitutes unacceptable

behavior and the procedures to be followed when there are alleged cases of misconduct. The dean of students also has some very brief pamphlets on key areas of the code. What follows is not the code but rather abbreviated and paraphrased statements on key elements of the code: academic and personal misconduct as well as a section on what students should do if they believe that other students, faculty, or staff have violated their rights. The code also explains the procedures employed and how students may appeal decisions. For more information, consult the Code of Student Rights, Responsibilities, and Conduct as well as brochures located in the Office of the Dean of Students.

#### Indiana University Purdue University Indianapolis Code of Conduct

Cheating of any kind will be grounds for failure. You are allowed to discuss your assignments with others. However, you are expected to submit your own work for grading. You are expected to create your own assignments independent of others except when directed to work in teams. Do not cheat. The submission of false computer output is also considered to be cheating.

Cheating will not be tolerated. Cheating and/or plagiarism will be immediately punished with a grade of zero for the assignment in question, reported to the Chairman of the Department of Computer and Information Technology and a letter describing the infraction will be placed in your student file. Further disciplinary action will be pursued according to university policy as described in Part III of the Code of Student Rights, Responsibilities, and Conduct (Issued August 15, 1997).

Instructors using software to detect plagiarism are encouraged to investigate whether or not the student's permission is needed.

#### **IX. AMERICANS WITH DISABILITIES ACT**

If you need any special accommodations due to a disability, please contact Adaptive Educational Services at (317)-274-3241. The office is located in CA 001E.

**New Course Request**

**Indiana University**

Indianapolis

Campus

Check Appropriate Boxes:

Undergraduate credit

Graduate credit

Professional credit

1. School/Division Purdue School of Engineering and Technology 2. Academic Subject Code TECH

3. Course Number 56300 (must be cleared with University Enrollment Services) 4. Instructor Charlie Feldhaus

5. Course Title History, trends, and limitations of technology

Recommended Abbreviation (Optional) \_\_\_\_\_  
(Limited to 32 Characters including spaces)

6. First time this course is to be offered (Semester/Year): Spring 2010

7. Credit Hours: Fixed at 3 or Variable from \_\_\_\_\_ to \_\_\_\_\_

8. Is this course to be graded S-F (only)? Yes \_\_\_\_\_ No

9. Is variable title approval being requested? Yes  No

10. Course description (not to exceed 50 words) for Bulletin publication: Participants will learn the fundamental concepts in engineering and technology education. This course will develop the philosophy and nature of technology in history. Students will also learn the limitations and scope which impacts the field of engineering technology.

11. Lecture Contact Hours: Fixed at 3 or Variable from \_\_\_\_\_ to \_\_\_\_\_

12. Non-Lecture Contact Hours: Fixed at \_\_\_\_\_ or Variable from \_\_\_\_\_ to \_\_\_\_\_

13. Estimated enrollment: 10 of which 100 percent are expected to be graduate students.

14. Frequency of scheduling: every spring Will this course be required for majors? yes

15. Justification for new course: Part of Area of Concentration for Engineering Technology Education

16. Are the necessary reading materials currently available in the appropriate library? yes

17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.

18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by:

Approved by:

Charlie Feldhaus Date 8/19/09  
Department Chairman/Division Director

Ande D. Aar Date 9/8/09  
Dean

\_\_\_\_\_  
Date \_\_\_\_\_  
Dean of Graduate School (when required)

\_\_\_\_\_  
Date \_\_\_\_\_  
Chancellor/Vice-President

\_\_\_\_\_  
Date \_\_\_\_\_  
University Enrollment Services

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.