Eastern Illinois University
New Course Proposal
AET 1323, Computers for Applied Engineering and Technology

Please check one: ☑ New course ☐ Revised course

PART I: CATALOG DESCRIPTION

1. Course prefix and number, such as ART 1000: AET 1323
2. Title (may not exceed 30 characters, including spaces): Computers for App Engr & Tech
3. Long title, if any: Computers for Applied Engineering and Technology
4. Class hours per week, lab hours per week, and credit [e.g., (3-0-3)]: 2-2-3
5. Term(s) to be offered: ☑ Fall ☐ Spring ☐ Summer ☐ On demand
6. Initial term of offering: ☑ Fall ☐ Spring ☐ Summer ☐ Year 2009
7. Course description (not to exceed four lines):
   An introduction to the use of computers in technological environments. Students will learn computer
   hardware systems and software applications used by industry, commercial operations, production and
   related types of organizations.
8. Registration restrictions:
   a. Identify any equivalent courses (e.g., cross-listed course, non-honors version of an honors course). None
   b. Prerequisite(s), including required test scores, courses, grades in courses, and technical skills. Indicate
      whether any prerequisite course(s) MAY be taken concurrently with the proposed/revised course. None
   c. Who can waive the prerequisite(s)? N/A
      ☑ No one ☐ Chair ☐ Instructor ☐ Advisor ☐ Program Coordinator ☐ Other (Please specify
   d. Co-requisites (course(s) which MUST be taken concurrently with this one): None
   e. Repeat status: ☑ Course may not be repeated.
      ☐ Course may be repeated to a maximum of ______ hours or ______ times.
   f. Degree, college, major(s), level, or class to which registration in the course is restricted, if any: None
   g. Degree, college, major(s), level, or class to be excluded from the course, if any: None
9. Special course attributes [cultural diversity, general education (indicate component), honors, remedial, writing
   centered or writing intensive] None
10. Grading methods (check all that apply): ☑ Standard letter ☐ C/NC ☐ Audit ☐ ABC/NC (“Standard
    letter”—i.e., ABCDF--is assumed to be the default grading method unless the course description indicates
    otherwise.)
11. Instructional delivery method: ☐ lecture ☐ lab ☑ lecture/lab combined ☐ independent study/research
    ☐ internship ☐ performance ☐ practicum or clinical ☐ study abroad ☐ other
PART TWO: ASSURANCE OF STUDENT LEARNING
(See the CAA website for examples of items 1, 2, and 3.)

1. List the student learning objectives of this course:

   1. Describe Information Technology, the Web, the Internet, and Electronic Commerce as it applies to Industrial Technology.
   2. Analyze basic and specialized software as to their use in a technology environment such as an industrial or commercial setting.
   3. Describe the parts of a computer system such as the system software, the system unit, the input and output units, storage and communications.
   4. Discuss the aspects of security and privacy as they apply to an industrial or commercial setting.
   5. Describe the uses of databases as they apply to industrial, commercial and related settings.
   6. Evaluate the uses of system analysis and design in an industrial or commercial setting.
   7. Evaluate the types of programming and programming languages used in industrial, commercial and related settings such as Discrete Event Simulation, Human-Machine Interface (HMI), Industrial Transaction Manager, etc.
   8. Apply the learned principles of computer hardware and software to specify a system for use in an industrial, commercial, or related setting.
   9. Create reports using software found in industrial, commercial, or related settings.
   10. Using technology management software, create a document for an industrial, commercial, and related setting that involves one or more of the following: a plan, resource to task assignment, progress tracking, a budget, workload analysis.

   a. If this is a general education course, … Not a general education course
   b. If this is a graduate-level course, … Not a graduate-level course

2. Identify the assignments/activities the instructor will use to determine how well students attained the learning objectives:

   Lab based midterm test, lab activities, lab based comprehensive final, and quizzes.

3. Explain how the instructor will determine students’ grades for the course:

<table>
<thead>
<tr>
<th>Objective</th>
<th>Quizzes 10%</th>
<th>Lab based Midterm Test 25%</th>
<th>Lab Activities 40%</th>
<th>Lab based Comprehensive Final 25%</th>
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<tbody>
<tr>
<td>1</td>
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<td>7</td>
<td>X</td>
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</tbody>
</table>
4. For technology-delivered and other nontraditional-delivered courses/sections,… Not technology-delivered

5. For courses numbered 4750-4999, … Not applicable

6. If applicable, indicate whether this course is writing-active, … Not applicable

PART III: OUTLINE OF THE COURSE

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Topic(s)</th>
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<tbody>
<tr>
<td>1</td>
<td>Overview of information technology, the Internet and web, e-manufacturing, e-production, basic and specialized application software.</td>
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<tr>
<td>1.5</td>
<td>Lab activity using an industrial, commercial, or related environment presentation software such as animated HMI software, e.g. arena.</td>
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<tr>
<td>1.5</td>
<td>Overview of computer hardware systems and software.</td>
</tr>
<tr>
<td>1.5</td>
<td>Introduction to digital communications and networking.</td>
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<tr>
<td>0.5</td>
<td>Lab activity assembling, testing and configuring a computer system.</td>
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<tr>
<td>0.5</td>
<td>Lab activity setting up a computer network.</td>
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<tr>
<td>0.5</td>
<td>Overview of privacy, computer security, system analysis and design in an industrial, commercial, or related environment.</td>
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<tr>
<td>2</td>
<td>Lab activity creating reports using industrial, commercial, and related environment reporting process, specialized report generating software, e.g. crystal reports, and other related products.</td>
</tr>
<tr>
<td>1</td>
<td>Introduction to industrial transaction database and industrial transaction database management software used in industry, commercial, or related environments.</td>
</tr>
<tr>
<td>1.5</td>
<td>Lab activity using an industrial transaction database management software, e.g. rssql, and other related products.</td>
</tr>
<tr>
<td>1</td>
<td>Lab activity specifying computer systems, operating system software, and networking equipment for an industrial, commercial, or related environment.</td>
</tr>
<tr>
<td>1.5</td>
<td>Lab activity using technology management software, e.g. open mind.</td>
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<tr>
<td>1</td>
<td>Midterm Test and quizzes.</td>
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<tr>
<td>15</td>
<td>Total</td>
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</table>

Provide a week-by-week outline of the course’s content. Specify units of time (e.g., for a 3-0-3 course, 45 fifty-minute class periods over 15 weeks) for each major topic in the outline. Provide clear and sufficient details about content and procedures so that possible questions of overlap with other courses can be addressed.
For technology-delivered or other nontraditional-delivered courses/sections, explain how the course content “units” are sufficiently equivalent to the traditional on-campus semester hour units of time described above.

PART IV: PURPOSE AND NEED

1. Explain the department’s rationale for developing and proposing the course.

   The Applied Engineering & Technology degree program is being updated as a result of significant changes in technology, such as computer technology for example, that have significantly impacted the program. Computers of all types are now an integral part of industrial technology areas such as automation, production, construction, and digital imaging and printing. Students need pertinent computer exposure and experience on how computers are used in the industrial technology areas from the very beginning of the Technology degree program. This course will help satisfy this important need.

   a. If this is a general education course, you also must indicate the segment of the general education program into which it will be placed, and describe how the course meets the requirements of that segment.
   b. If the course or some sections of the course may be technology delivered, explain why.

2. Justify the level of the course and any course prerequisites, co-requisites, or registration restrictions.

   Since this will be one of the first courses students in Applied Engineering & Technology take, it will be at the freshman level. No prerequisites are needed since the course will help students develop necessary computer skills.

   If the course is similar to an existing course or courses, justify its development and offering.

   This course content does not substantially duplicate any existing course although BUS1950 Computer Concepts and Applications for Business does cover general computer topics. However, as in all computer courses there are some similar computer topics but the application of the topics is applied in context. Because of the updated program, Technology students will need more detailed work and lab activities with computer systems as well as development of experience with report generating products including technology management software, as used in technological environments in industry, commercial, and related environments. This course is designed to expose Technology students to software they will be using within the Technology curriculum. Lab activities involving these areas as well as basics of computer networking will be a vital and integral part of the course.

   a. If the contents substantially duplicate those of an existing course, the new proposal should be discussed with the appropriate chairpersons, deans, or curriculum committees and their responses noted in the proposal.
   b. Cite course(s) to be deleted if the new course is approved. If no deletions are planned, note the exceptional need to be met or the curricular gap to be filled.

3. Impact on Program(s):
This course will be part of the first level core of the Applied Engineering & Technology degree program: Introduction to Technological Studies (Human kind, Machines, and Materials).

a. For undergraduate programs, specify whether this course will be required for a major or minor or used as an approved elective.
b. For graduate programs, specify whether this course will be a core requirement for all candidates in a degree or certificate program or an approved elective.

If the proposed course changes a major, minor, or certificate program in or outside of the department, you must submit a separate proposal requesting that change along with the course proposal. Provide a copy of the existing program in the current catalog with the requested changes noted.

PART V: IMPLEMENTATION

1. Faculty member(s) to whom the course may be assigned: Dr. Rendong Bai, Dr. Rigo Chinchilla, Dr. Sam Guccione

If this is a graduate course and the department does not currently offer a graduate program, it must document that it employs faculty qualified to teach graduate courses.

2. Additional costs to students: $20 lab fee to cover cost of computer parts and cables, paper, toner cartridges, small tools, and related items.

Include those for supplemental packets, hardware/software, or any other additional instructional, technical, or technological requirements. (Course fees must be approved by the President’s Council.)

3. Text and supplementary materials to be used (Include publication dates):

Handouts for specialized software

PART VI: COMMUNITY COLLEGE TRANSFER

If the proposed course is a 1000- or 2000-level course, state either, "A community college course may be judged equivalent to this course" OR "A community college course will not be judged equivalent to this course." A community college course will not be judged equivalent to a 3000- or 4000-level course but may be accepted as a substitute; however, upper-division credit will not be awarded.

A community college course may be judged equivalent to this course.

PART VII: APPROVALS

Date approved by the department or school February 16, 2009

Date approved by the college curriculum committee: April 13, 2009
*In **writing-active courses**, frequent, brief writing activities and assignments are required. Such activities -- some of which are to be graded – might include five-minute in-class writing assignments, journal keeping, lab reports, essay examinations, short papers, longer papers, or a variety of other writing-to-learn activities of the instructor's invention. Writing assignments and activities in writing-active courses are designed primarily to assist students in mastering course content, secondarily to strengthen students' writing skills. In **writing-intensive courses**, several writing assignments and writing activities are required. These assignments and activities, which are to be spread over the course of the semester, serve the dual purpose of strengthening writing skills and deepening understanding of course content. At least one writing assignment is to be revised by the student after it has been read and commented on by the instructor. In writing-intensive courses, students’ writing should constitute no less than 35% of the final course grade. In **writing-centered courses** (English 1001G, English 1002G, and their honors equivalents), students learn the principles and the process of writing in all of its stages, from inception to completion. The quality of students' writing is the principal determinant of the course grade. The minimum writing requirement is 20 pages (5,000 words).