

Eastern Illinois University  
**COURSE PROPOSAL FORMAT**

This format is to be used for all courses submitted to the Council on Academic Affairs and/or the Council on Graduate Studies.

Gray boxes (except check boxes) will expand as you type in them.

**Please check one:**      ☒ New course      ☐ Revised course

**PART I: CATALOG DESCRIPTION**

1. Course prefix and number, such as ART 1000: **TEC 5373**
2. Title (may not exceed 30 characters, including spaces): **Java Application in Technology**
3. Long title, if any:
4. Class hours per week, lab hours per week, and credit [e.g., (3-0-3)]: **3-0-3**
5. Term(s) to be offered: ☐ Fall    ☒ Spring    ☒ Summer    ☐ On demand
6. Initial term of offering: ☐ Fall    ☒ Spring    ☐ Summer    ☒ Year **2011**
7. Course description (not to exceed four lines):

**A Java course focusing on applications in technology. Students will review Java literature, participate in programming laboratory in digital instrument communication and control, and learn Java web application and enterprise architecture.**

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.  
**Admission to the graduate program in technology**
  - c. Who can waive the prerequisite(s)?  
☐ 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 combined (This is a drop-down menu.)

## 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:
  - a. If this is a general education course, indicate which objectives are designed to help students achieve one or more of the following goals of general education and university-wide assessment:
    - EIU graduates will write and speak effectively.
    - EIU graduates will think critically.
    - EIU graduates will function as responsible citizens.

### Not a general education course

- b. If this is a graduate-level course, indicate which objectives are designed to help students achieve established goals for learning at the graduate level:
      - Depth of content knowledge
      - Effective critical thinking and problem solving
      - Effective oral and written communication
      - Advanced scholarship through research or creative activity
1. Describe Java platform including history, components, applications, and program design.
  2. Install Java development environments.
  3. Analyze Java program in digital instrument application including control structure, object-oriented design, communication, and database access.
  4. Apply programming skills to technology applications.
  5. Understand principals of communication with and control of digital instruments.
  6. Develop basic Java programs for digital instruments.
  7. Develop web applications using J2EE framework.
  8. Demonstrate Java architecture for enterprise computing.
  9. Research similarities and differences between Java and other languages such as C#.
  10. Demonstrate professional formatting for designing, developing, documenting, version management, and code reuse.
2. Identify the assignments/activities the instructor will use to determine how well students attained the learning objectives:

### Quizzes, lab activities, individual and team projects, midterm, and final exam/research.

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

Objective	Quizzes 10%	Lab Activities 30%	Projects 30%	Midterm 15%	Final 15%
1	X		X	X	X
2		X			
3	X	X	X	X	X
4	X	X	X	X	X

5	X	X	X	X	X
6	X		X	X	X
7	X	X	X	X	X
8	X	X		X	X
9	X		X	X	X
10		X	X		X

4. For technology-delivered and other nontraditional-delivered courses/sections, address the following:
- Describe how the format/technology will be used to support and assess students' achievement of the specified learning objectives:
  - Describe how the integrity of student work will be assured:
  - Describe provisions for and requirements of instructor-student and student-student interaction, including the kinds of technologies that will be used to support the interaction (e.g., e-mail, web-based discussions, computer conferences, etc.):

**This course can be offered in both traditional-delivered and technology delivered settings. When being offered as technology-delivered:**

- The course will be delivered in an on-line learning environment - WebCT. Learning materials, discussions, assignments, and grading will all be placed on WebCT.**
  - Instructor talks to students and ask questions about assignments to assure the integrity. Tests may use a face-to-face format or use web-conferencing software such as Elluminate Live.**
  - Class interactions will use a combination of email, on-line discussion, web conferencing (virtual classroom with audio/video and white board support), and social networks.**
5. For courses numbered 4750-4999, specify additional or more stringent requirements for students enrolling for graduate credit. These include:
- course objectives;
  - projects that require application and analysis of the course content; and
  - separate methods of evaluation for undergraduate and graduate students.

N/A

6. If applicable, indicate whether this course is writing-active, writing-intensive, or writing-centered, and describe how the course satisfies the criteria for the type of writing course identified. (See Appendix \*.)

N/A

### PART III: OUTLINE OF THE COURSE

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.

Topics	Weeks
Review of Java platform: origin, history, and applications	1

Java application in digital instrument: variables and control structure	1
Lab 1: Phidgets USB sensing and control toolkit introduction	1
Java application in digital instrument: application of objects	2
Lab 2: Phidgets temperature sensor programming	1
Java application in digital instrument: communication protocol	1
Lab 3: RFID reader programming	1
Java application in digital instrument: communication library	1
Lab 4: Digital harness testing I	1
Java application in digital instrument: database access and data modification	1
Lab 5: Digital harness testing II	1
Java application in digital instrument: J2EE and web application	2
Lab 6: Server side web programming	1
<b>Total</b>	<b>15</b>

#### PART IV: PURPOSE AND NEED

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

**The purpose of this course is to teach graduate students in School of Technology Java applications in industrial environments. This course reviews Java literature including platform and program design. It focuses on applications in digital instrument communication and control. It will help computer technology professionals understand Java applications and find proper Java techniques to suit their computing needs in technology applications.**

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

**This graduate level course is suitable for students who plan to apply various Java tools to technology applications. It will provide graduate students with knowledge and skills to effectively use Java technologies for web and enterprise applications. Students will not only review Java literature, but also will actively participate in programming laboratory and application development on web and enterprise architecture. Furthermore, students will understand the importance of documentation, organization, and code reuse.**

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

**None at the graduate level.**

**School of Business has been consulted, which offers MIS 3330 and MIS 4330 for undergraduate students in Management Information Systems (MIS) major. Special attentions were paid to ensure there is no overlap between the proposed and the existing courses.**

**The proposed course serves the needs of graduate students in School of Technology. It has a distinctive focus on technology applications such as digital instrument communication and control.**

**Mathematics & Computer Science Department offers two undergraduate-level programming related courses: MAT 2170 and MAT 2670. These two courses focus on general programming principles and do not necessarily use Java programming language only.**

4. Impact on Program(s):

- 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.

**This course will considerably enhance the current graduate curriculum, but it is not intended to be a core requirement.**

## **PART V: IMPLEMENTATION**

1. Faculty member(s) to whom the course may be assigned:

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.

**Dr. Rendong Bai, Dr. Sam Guccione, Dr. Rigo Chinchilla, and Dr. Peter Ping Liu.**

2. Additional costs to students:

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.)

**None**

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

**Java: A Beginner's Guide, 4th Ed., Herbert Schildt, McGraw-Hill Osborne, 2006**  
**Online resources (<http://java.sun.com>)**

## 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.

## PART VII: APPROVALS

Date approved by the department or school \_\_\_\_\_ 10/19/2009 \_\_\_\_\_

Date approved by the college curriculum committee \_\_\_\_\_ 2/8/10 \_\_\_\_\_

Date approved by the Honors Council (if this is an honors course) \_\_\_\_\_

Date approved by CAA \_\_\_\_\_ CGS \_\_\_\_\_

\*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).

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