WINONA STATE UNIVERSITY
PROPOSAL FOR NEW COURSES

Department __________ Computer Science ________ Date ______ 9/25/07

Refer to Regulation 3-4, Policy for Changing the Curriculum, for complete information on submitting proposals for curricular changes.

<table>
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<tr>
<th>Course No.</th>
<th>Course Name</th>
<th>Credits</th>
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<tr>
<td>CS 295</td>
<td>Computer Technology Project</td>
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This proposal is for a(n) __X__ Undergraduate Course __ ___ Graduate Course

Applies to:  ___ Major __X__ Minor  ___ University Studies*
___ Required __X__ Required ___ Not for USP
___ Elective __ ___ Elective

Prerequisites  3 of the 4 required CS courses for the CT minor; 300- or 400-level approved course in student’s major

Grading method _____ Grade only ______ P/NC only __X__ Grade and P/NC Option

Frequency of offering __Once a year_____

*For University Studies Program course approval, the form Proposal for University Studies Courses must also be completed and submitted according to the instructions on that form.

Provide the following information:

A. Course Description
   1. Catalog description.
   2. Course outline of the major topics and subtopics (minimum of two-level outline).
   3. Instructional methods utilized. Please indicate the contributions of lectures, laboratories, web-based materials, internships, and other instructional methods to this course.
   4. Course requirements (papers, lab work, projects, etc.) and means of evaluation.
   5. Course materials (textbook(s), articles, etc.).
   6. List of references.

B. Rationale
   1. Statement of the major focus and objectives of the course.
   2. Specify how this new course contributes to the departmental curriculum.
   3. Indicate any course(s) which may be dropped if this course is approved.

C. Impact of this Course on other Departments, Programs, Majors, or Minors
   1. Does this course increase or decrease the total credits required by a major or minor of any other department? If so, which department(s)?
   2. List the department(s), if any, which have been consulted about this proposal.

Attach a Financial and Staffing Data Sheet.

Attach an Approval Form with appropriate signatures.

Department Contact Person for this Proposal:

_____Joan Francioni______________________  x 2336  jfrancioni@winona.edu
Name (please print)  Phone  e-mail address

Form Revised 4-13-05
A. Provide a description of the course.

1. Description of the course as it will appear in the WSU catalog.

**CS 295 – Computer Technology Project – 3 S.H.**
This course gives students an opportunity to apply their computer technology knowledge to a project directly related to their major. Students will design and implement their own projects; however, the projects must be relevant to specific course content in the student’s major. Students will learn how to develop functional requirements, solution designs, implementation time-lines, and maintenance plans for their project. Projects must be pre-approved by both the course instructor and a faculty member in the student’s major department. Final presentations of all projects will be part of the course. **Pre-requisite:** CS 110, CS 115, CS 116, CS 130 or 150, and approved 300- or 400-level course in student’s major.

2. Syllabus or course outline of the major topics, themes, subtopics, etc., to be covered in the course. This outline should be, at a minimum, a two-level outline, i.e., consisting of topics and subtopics.

**Computer Technology Project – Course Outline**

**Topics:**

1. Introduction
   a. Terminology
   b. Basic software engineering process model

2. Project Requirements
   a. Level of project
   b. Reports and presentation
   c. Timeline

3. Project Design Process
   a. Requirements capture and analysis
   b. Functional Specifications
   c. Design

4. Implementation and Testing
   a. Incremental implementation/testing
   b. Human factors
      i. Accessibility
      ii. Usability study

5. Maintenance
   a. User maintenance information
   b. Integration with other parts of system
   c. System and server requirements

6. Computer ethical and societal issues
   Review of issues from CS 110, as relevant to student projects, e.g., liability, property rights, privacy

7. Individual student projects
Schedule:

Week 1: Introduction
- Project examples

Week 2: Project Requirements
- Initial project ideas due

Week 3: Project Design Process

Week 4: Project Design Report (draft 1) due
- Implementation and Testing

Week 5: Implementation Plan (draft 1) due
- Maintenance

Week 6: Maintenance/Integration Plan (draft 1) due

Weeks 7-14: Project Implementation and Testing Phase
- Students will meet individually with course instructor, at least, every other week to discuss project status.
- In-class directed discussion about issues related to students’ projects, including computer ethical and societal issues.

Week 10: Final Project Design Report, Implementation Plan, and Maintenance Plan due

Week 15: Project presentations

3. Statement of the basic instructional plan and methods used, for example, lectures, discussion, etc.

General Instructional Plan:
Course will meet regularly for the first 6 weeks of the semester. Students will be assigned readings and participate in class discussions led by instructor on topics 1-5.

In the second part of the semester, class will take on more of a seminar style, with discussions focusing on the issues students are dealing with in their projects as well as computer ethical and societal issues. Students will be expected to also meet individually with the instructor every other week during this part of the semester to discuss the progress on their individual projects.

Projects will have to be approved by the course instructor and a faculty member in the student’s major department.

Students will turn in written reports during the semester and make a formal presentation of their project during the last week of the semester.

4. Course requirements (papers, lab work, projects, etc.) and means of evaluation.

Course Requirements:
Written Reports (30%)
- Project Design Document
  - Project requirements
  - Functional specification
  - Project components and design relationships
- Implementation Plan
  - Project timeline
  - Testing strategy
  - Human factors plan
- Maintenance Plan
  - User Manual
  - System and server requirements
Reflection/Evaluation Report

- What worked
- What didn’t
- What was learned

Project Implementation (60%)
- Project Requirements met
- Appropriate technology used
- Creativity

Project Presentation (10%)
- Content
- Delivery

5. List of course materials. This list may include textbooks, articles, monographs, software, etc.

   Handouts

6. Bibliography, including author, title, date, for a reasonable number of scholarly materials such as articles and books.

   - Facts and Fallacies of Software Engineering; Robert Glass; Addison Wesley; 2003
   - Usability Engineering: Scenario-Based Development of Human Computer Interaction; Mary Beth Rosson and John M. Carroll; Morgan Kaufmann, 2001
   - Effective Prototyping for Software Makers; Jonathan Arnowitz, Michael Arent, Nevin Berger; Morgan Kaufmann, 2006
   - Inclusive Design Guidelines for HCI; Julio Abascal and Collette Nicolle; CRC, 2001

B. Provide a rationale for the new course. The rationale should include the following item.

1. Statement of the major focus and objectives of the course.

   This course is designed for students to gain relevant and practical knowledge about using computer technology, as it relates to their discipline. It is also designed so that students put together concepts from multiple computer technology courses to solve a specific problem. The combination is expected to broaden students understanding of the power as well as limitations of computer technology solutions and the practical realities of computer technology solutions.

   **Student Learning Objectives:**
   - Students will increase their level of comfort and skill in working with computer technology.
   - Students will gain experience in time-management, as it relates to designing computer technology solutions.
   - Students will apply computer technology concepts in a project that is relevant to their major.
   - Students will design, implement, and test a full computer project.

2. Statement specifying how this course will contribute to the departmental curriculum.

   This course will serve as the capstone course for the proposed Computer Technology Minor.

3. Courses which may be dropped, if any, if this course is implemented.

   NA
C. Provide a statement of the impact of this course on other departments, programs, majors, and minors.

1. Clearly state the impact of this course on courses taught in other departments. Does this course duplicate the content of any other course? Is there an effect on prerequisites?

   As students are required to apply their project to concepts in their major, this course has the potential to impact many courses. However, this will not be a negative impact; rather it will be a value added to those courses.

   We are not aware of duplication of content in this course with any other course, nor is there any effect on pre-requisites.

2. Would approval of this course change the total number of credits required by any major or minor of any department? If so, the department must indicate which departments are affected and explain carefully the effects of the course.

   No.

3. If this course has an impact on the major or minor of any other department or any program, it is the responsibility of the department submitting the course proposal to send written notification to the department(s) or program(s) affected. State clearly which other programs are affected by this proposal and whether the other departments have been notified and/or consulted.

   No other departments impacted.
WINONA STATE UNIVERSITY
FINANCIAL AND STAFFING DATA SHEET

Course or Program: CS 295 Computer Technology Project

Include a Financial and Staffing Data Sheet with any proposal for a new course, new program, or revised program.

Please answer the following questions completely. Provide supporting data.

1. Would this course or program be taught with existing staff or with new or additional staff? If this course would be taught by adjunct faculty, include a rationale.

   This course would be taught with existing staff, initially. Eventually, the number of students working on a CT minor may warrant additional staff.

2. What impact would approval of this course/program have on current course offerings? Please discuss number of sections of current offerings, dropping of courses, etc.

   We will initially offer one section of this course, once per year, until the number of CT minors warrants more frequent offerings. As such, this will have little to no impact on current program and course offerings.

3. What effect would approval of this course/program have on the department supplies? Include data to support expenditures for staffing, equipment, supplies, instructional resources, etc.

   Little to no effect.

[Revised 9-05]
**Department Recommendation**

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**Dean’s Recommendation**

- Approved
- Disapproved

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**A2C2 Recommendation**

- Approved
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**Graduate Council Recommendation (if applicable)**

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**Faculty Senate Recommendation**

- Approved
- Disapproved

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**Academic Vice President Recommendation**

- Approved
- Disapproved

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**Decision of President**

- Approved
- Disapproved

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