WMU - Internal Curriculum Form - New

Department Contact Information:
- Start Date: 15-10-2018
- College: A
- Department: CS
- Initiator name: Jason Johnson
- Department email: jason.e.johnson@wmich.edu

Effective Term:
- 201940
- Does course need General Education approval? Y
- Will course be used in teacher education? N
- If 5000 level course, prerequisites apply to: U
Change Course: CS 4910
Specific Course Change type selected: Title
Specific Course Change type selected: Description
Specific Course Change type selected: Credit hours
Specific Course Change type selected: Other (explain)

1. Existing course prefix and number:
   CS 4910

2. Existing credit hours:
   Unknown Credit Hours for CS 4910 in term 201940

3. Proposed credit hours:
   3

4. Proposed course title:
   Software Systems Development II: Implementation, Testing

5. Existing Banner course title:
   Unknown Title for CS 4910 in term 201940

6. Proposed course title to be entered in Banner:
   Soft Sys Dev II Impl, Test

7. Other (*** explain):
   Addition of content previously available in the 1 credit hour course CS 4980: The Computer Science Profession.

A. Please choose Yes or No to indicate if this class is a Teacher Education class:
   No

B. Please choose the applicable class level:
   Undergraduate

C. Please respond Yes if this is a current general education course and/or a course being submitted for the new WMU Essential Studies program. Please respond No if it is neither.
   Yes

D. Explain briefly and clearly the proposed improvement:
   Change the course from 2 credit hours of project time to 2 credit hours of project time and 1 credit hour of class time. The class will have one 3 hr 40 min lab for project work each week and one hour for ethics, social issues, societal implications. The 2 components will be linked in the registration system (such that students must take both components in the same semester and receive a single grade for the overall course).

E. Rationale. Give your reason(s) for the proposed improvement. (If your proposal includes prerequisites, justify these, too.)
   The topics currently covered in CS 4980: The Computer Science Profession, specifically professional, ethical and societal issues, are best ingrained in the second capstone project CS 4910. Students will be able to better learn and apply those concepts and ideas in a practical setting.

F. List the student learning outcomes for the proposed course or the revised or proposed major, minor, or concentration. These are the outcomes that the department will use for future assessments of the course or program.
   Students will be able to:
   - work in small teams to deliver a project using Agile methodologies and modern tools.
   - understand how to do a basic security analysis and address security issues.
   - understand how to produce maintainable software.
   - understand software testing and its automation.
   - write a paper on some professional, ethical, legal, security, and social issues and responsibilities.
   - write a paper on the need for and ability to engage in continuing professional development.
   - provide a public presentation of the team project.
   - explain IEEE Computer Society and Association for Computing Machinery resources for students, support for career decisions, general publications, and specialized interest groups.
   - relate ethical issues to a professional code of ethics.
   - explain social issues related to computing including privacy, freedom of speech, intellectual property, crime involving computers, workplace impact of technology, the impact of errors, failures, and risks involving computing.
   - explain the globalization of computing as it relates to a specific country other than the United States of America.

G. Describe how this curriculum change is a response to student learning assessment outcomes that are part of a departmental or college assessment plan or informal assessment activities.
   This will have a positive impact on the department's future accreditation plan under the new (Version 2) ABET accreditation requirements.

H. Effect on other colleges, departments or programs. If consultation with others is required, attach evidence of consultation and support. If objections have been raised, document the resolution. Demonstrate that the program you propose is not a duplication of an existing one.
   Not applicable.

I. Effect on your department's programs. Show how the proposed change fits with other departmental offerings.
   No net effect in total number of credits, but this adds 1 additional CS credit hour - which takes 1 credit hour away from the University Electives.

J. Effects on enrolled students: are program conflicts avoided? Will your proposal make it easier or harder for students to meet graduation requirements? Can students complete the program in a reasonable time? Show that you have considered scheduling needs and demands on students' time, if a required course will be offered during summer only, provide a rationale.
   No net effect on enrolled students. Future students would have one more required credit and one less elective credit, but the same total number of credits will be required for graduation.

K. Student or external market demand. What is your anticipated student audience? What

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https://bwfp1.cc.wmich.edu/7102/wfp.prod/home/newLaunch.do?workItemPK=91460472
F. List the student learning outcomes for the proposed course or the revised or proposed major, minor, or concentration. These are the outcomes that the department will use for future assessments of the course or program.

Students will be able to:
- work in small teams to deliver a project using Agile methodologies and modern tools.
- understand how to do a basic security analysis and address security issues.
- understand the how to produce maintainable software.
- understand software testing and its automation.
- write a paper on such topics as professional, ethical, legal, security and social issues and responsibilities.
- write a paper on the need for and ability to engage in continuous professional development.
- provide a public presentation of the team project.
- explain IEEE Computer Society and Association for Computing Machinery resources for students, support for career decisions, general publications, and specialized interest groups.
- relate ethical issues to a professional code of ethics.
- explain social issues related to computing including privacy, freedom of speech, intellectual property, crime involving computers, workplace impact of technology, the impact of errors, failures, and risks involving computing.
- explain the globalization of computing as it relates to a specific country other than the United States of America.

G. Describe how this curriculum change is a response to student learning assessment outcomes that are part of a departmental or college assessment plan or informal assessment activities.

This will have a positive impact on the department's future accreditation plan under the new (Version 2) ABET accreditation requirements.

H. Effect on other colleges, departments or programs. If consultation with others is required, attach evidence of consultation and support. If objections have been raised, document the resolution. Demonstrate that the program you propose is not a duplication of an existing one. Not applicable.

I. Effect on your department's programs. Show how the proposed change fits with other departmental offerings.

No net effect on total number of credits, but this adds 1 additional CS credit hour – which takes 1 credit hour away from the University Electives.

J. Effects on enrolled students: are program conflicts avoided? Will your proposal make it easier or harder for students to meet graduation requirements? Can students complete the program in a reasonable time? Show that you have considered scheduling needs and demands on students' time. If a required course will be offered during summer, provide a rationale.

No net effect on enrolled students. Future students would have one more required credit and one less elective credit, but the same total number of credits will be required for graduation.

K. Student or external market demand. What is your anticipated student audience? What evidence of student or market demand or need exists? What is the estimated enrollment? What other factors make your proposal beneficial to students? No change to the student audience. This course will be required for all CS undergraduate students.

L. Effects on resources. Explain how your proposal would affect department and University resources, including faculty, equipment, space, technology, and library holdings. Tell how you will staff additions to the program. If more advising will be needed, how will you provide for it? How often will course(s) be offered? What will be the initial one-time costs and the ongoing base-funding costs for the proposed program? Attach additional pages, as necessary. Additional resources of a TA to cover the second component.

M. With the change from General Education to W&M Essentials, this question is no longer used.

For courses requiring approval as a W&M Essential Studies course, a syllabus identifying the student learning outcomes and an action plan for assessing the student learning outcomes must be attached in the Banner Workflow system.

Not Applicable

N. (Undergraduate proposals only) Describe, in detail, how this curriculum change affects transfer articulation for Michigan community colleges. For course changes, list new course details in detail. For new majors or minors, describe transfer guidelines to be developed with Michigan community colleges. For revisions to majors or minors, describe necessary revisions to Michigan community college guidelines. Department chairs should seek assistance from college advising directors or from the admissions office in completing this section.

No effect on articulation agreements.

O. Current catalog copy:

This course is the second of a capstone project sequence required for all computer science majors. Students are placed into teams and assigned to complete an existing project for a client. The teams implement and debug code according to a design produced earlier. They produce a testing plan, carry out testing, record test results and summarize them. Prototype demonstrations and periodic progress reports are required to help assure steady progress. Individuals and teams produce a variety of documents throughout the course. These include a testing plan, a testing log, a summary of testing, a maintenance manual and a user manual. Teams also deliver a public demonstration at the end of the course.

P. Proposed catalog copy:

This course is the second of a capstone project sequence required for all computer science majors. Students are placed into teams and assigned to complete an existing project for a client. The teams implement and debug code according to a design produced earlier. They produce a testing plan, carry out testing, record test results and summarize them. Prototype demonstrations and periodic progress reports are required to help assure steady progress. Individuals and teams produce a variety of documents throughout the course. These include a testing plan, a testing log, a summary of testing, a maintenance manual and a user manual. Teams also deliver a public demonstration at the end of the course.

Discussion of the role of the computer scientist in society and current social and ethical issues related to computing and software development will be integrated into the course. Topics covered are designed to promote awareness of professional, ethical, and societal issues in the field of computer science.
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