Initiative Report for Bus/CIT 2009-10

Web Programming Degree - reinstate

Summary:

The Web Programming degree is again accepting students - in part driven by the huge demand of Trade Act students who need a computer technical alternative to existing CIT programs. Six courses need curriculum development to adapt the program to current employment needs.

Description

There is strong demand for a full 2-year online (web) programming degree, driven in large part by the population of displaced (Trade Act) workers. CIT enrollment is up by as much as 60%. Just counting summer, fall and winter terms FTE is already up by 2% for the year, without counting spring enrollments. Many of these students would prefer a profession in Web Programming, but are being forced to declare as Network majors.

To meet this demand and support these students the degree must be brought back now but with changes to the curriculum in the programming classes: CS295 (formerly CS195), CS296 (formerly CS195), CS133G, CS233G. There is also need for bringing back Visual Basic classes (CS133VB and CS233VB) as part of the Web Programming degree because of the demand for Health Informatics.

Questions and Answers

How is the initiative linked to the Unit Plans most recently submitted?

1. **How does it continue the achievement of those goals?**
2. **If this is a continuation of an initiative started last year, make sure that relationship is clear.**

How is this initiative linked to the efficiencies and productivities plans you had last year?

1. **How does it continue the achievement of these plans?**
2. **If this is a continuation of an efficiency or productivity plan started last year, make sure that relationship is clear.**

Unit Plan continuity
1. The Dept has aggressively been adjusting its offerings to meet current market conditions, whether through the suspension of the CUS degree, not accepting new Web Programming students last year, the creation of multiple innovative Pathway Certificates,

and developing the Computer Game Programming curriculum to have a greater online component. It is clear with the population of Trade Act students who want to study Web Programming that it is important to bring back this degree.

2. This is not a direct continuation of specific initiatives from last year, but is closely related to the work in last year's initiatives to update "core" courses, and to bring Game Programming closer to fully online.

Efficiencies
1. Multiple courses will be developed either partially or fully online; significant ongoing work to capture video "notes" that are very popular with students and contribute to improved retention efforts and more efficient tutorial support normally offered only though the Open instructional lab (19/135).

2. This effort is a continuation of CIT strategies. A general productivity plan is offering choices to appeal to different populations; offering instruction online and via hybrid classes to avoid capacity constraints of on-class instructional contexts; and creating a library of supplemental instructional materials for use by students as well as for tutoring in the context of the open Instructional Lab (19/135).

Describe the resources needed:

Curriculum Development

280 hrs: CS133G, CS233G, CS295 (formerly CS195), CS296 (formerly CS196) - all existing courses that need to be upgraded/aligned at 70 hrs per class

200 hrs: CIS133VB and CIS 233VB - old courses that are no longer in the catalog and that need to be completely recreated to meet the needs of both the new health informatics AS degree and recommended course of study, and also to meet the needs of the reinstated Web Programming degree.

What specific measurable program outcomes do you expect to achieve with this initiative? The outcomes should be specific enough to be measurable. Also, outline the method that will be used to determine the results.

There is a very large cohort of Trade Act students in Network Operations degree program. Many of them would prefer to be in Web Programming degree if it were available. The most significant outcome is that we will be able to serve these students, and will be at a considerably lower risk of overproducing Network Operations majors for the workforce, and of under-producing skilled programmers for the current market conditions.

A successful outcome can be tracked through the Advisors/Counselors who are better able to advise students what career to pursue; through the conversion of existing Network Operations Trade Act students to the Web Programming curriculum that better suits their

interests and job prospects; through the creation of a Web Programming curriculum that is structurally not at risk of recreating a curriculum that has enrollment challenges in its 2nd-year classes.

Department Priority:

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Unit Resources:

The primary faculty involved with the programming curriculum include Linda Loft, Mari Good, Jerry Ross. The Dept has developed support for programming students including tutorial support in the open instructional lab, use of web conferencing via Adobe Connect, engagement of part-time faculty in the lab. Computer infrastructure includes fee-supported labs, video recording equipment, servers and software, plus the staffing needed to implement, support and maintain this infrastructure.

Funding Request: Carl Perkins

Funding Request: Curriculum Development

1. List the following information

- **Course Numbers (titles if not currently offered)**
- **Instructor Name(s) who will work on the curriculum development**
- **Whether each of the courses is in, or has been through, the curriculum approval process**

(in priority order)
CS295: Mari Good, Linda Loft, Jerry Ross, Ron Little: existing course
CS296: Mari Good, Linda Loft, Jerry Ross, Ron Little: existing course
CS133G: Jim Bailey, Mari Good, Ron Little: existing course
CS233G: Jim Bailey, Mari Good, Ron Little: existing course
CS133VB: Mari Good, Linda Loft, Jerry Ross, Ron Little: course to reinstate
CS233VB: Mari Good, Linda Loft, Jerry Ross, Ron Little: course to reinstate

2. List each course number (or title) and the materials to be created for each class

- **Instructional goals, objectives, syllabi and outlines**
- **Lab instruction packets**
- **Practice, quiz, presentation &/or demonstration materials**
- **Other (specify)**

CS295:
CS296:
CS133G:
CS233G:
CS133VB:
CS233VB:
======== (for all of the above)

1. Instructional goals, objectives, syllabi and outlines
2. Lab instruction packets
3. Practice, quiz, presentation &/or demonstration materials
4. Online Development
5. Quality Matters review

3. List each course number (or title) and give your timeline for beginning and completing each course curriculum development.

CS295: July '09 - Dec '09
CS296: July '09 - Mar '09
CS133G: July '09 - Oct '09
CS233G: July '09 - Oct '09
CS133VB: July '09 - Dec '09
CS233VB: July '09 - Dec '09

4. What are up to 3 departmental instructional goals that are met through the development of curriculum in each class?

1. Breadth of offerings for market demands and student needs
2. Development of online instruction
3. Integration of offerings: College Now, CIT core, Network Operations, Web Programming, Health Informatics (under development) Web Programming Certificate, Web Design 1-yr (under development)

5. List each course number (or title) and give the value of the development of curriculum in each course to other faculty members.

CS295:
CS296:
======
These courses are critical for effective support of server-side programming. This content area is essential for serving students in knowing the full context of web programming.

CS133G:
CS233G:
======

These are the foundation of the Gaming degree and also offer students a pathway to C++ programming at the 4-year level.

CS133VB:
CS233VB:
======
These are required for Health Informatics, an emerging field of study being implemented as a Recommended Course of Study and an AS (direct transfer) option for students going to OIT.

By it's nature this work touches all CIT faculty members - Computer Programming is central to computer studies across the curriculum. Computer Networking students frequently find work initially in user support; Health Informatics is computer science and requires deep skills with databases and programming, Game programming is both a short-term job skill and also provides a transfer foundation for students continuing for a 4-yr degree.

6. List each course number (or title) and say how many students will be served by the development of curriculum in each class.

CS295:
CS296:
=====
(40)

CS133G:
CS233G:
(100)

CS133VB:
CS233VB
(20)

7. List each course number (or title) and give the specific benefits to students that you expect from the development of curriculum in each class.

CS295:
CS296:
======
Server-side technologies are essential to all programming today. Updating these courses is essential to maintaining job market relevance.

CS133G:
CS233G:
======
Programming in C++ is both a job market strength and an advantage for transferring to a

4-year institution. Game programming is immediately applicable to students in that field, and by its nature is of interest to students and helps with both recruitment and retention.

CS133VB:
CS233VB:
======
The Microsoft family of languages/technologies that is taught in these classes is an important job skill. These specific courses are required for Health Informatics, a new and quickly growing job market demand.

8. List each course number (or title) and give the specific benefits for diversity that you expect from the development of curriculum in each class.

CS295:
CS296:
CS133G:
CS233G:
CS133VB:
CS233VB:
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All of these courses and the programs that they are a part of are being developed with a goal of involving more women in programming, whether in the high schools as part of a recruitment strategy, or with the women who are displaced workers and present as part of the Trade Act population. Support is explicit for students with disabilities. A significant percentage of programming students are from other countries, and the development of online resources helps them function in written contexts and with video resources that can be repeatedly viewed for improved comprehension.

9. List each course number (or title) and give the specific benefits to sustainability that you expect from the development of curriculum in each class.

CS295:
CS296:
CS133G:
CS233G:
CS133VB:
CS233VB:
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The development of online curriculum as has already been described is a major recruitment and retention tool.

The programming curriculum is integrated with Network Operations, Health informatics, Game programming, Transfer programming, and the GIS curriculum. The integrated "pathways" approach is a key sustainability strategy. Creating entire new curriculum like

Health Informatics or Web Design by using careful combinations of existing courses is a key sustainability strategy. Developing online and video resources that can be created once but used many times is a key sustainability strategy. Development of a one-room schoolhouse technique that allows lower enrollment courses to be offered on a year-round basis is a key sustainability strategy.

10. List each course number (or title) and give the specific effects on distributed learning that you expect from the development of curriculum in each class.

CS295:
CS296:
CS133G:
CS233G:
CS133VB:
CS233VB:
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All courses either have been developed to teach online, or are in the process of being newly available in this format. All courses feature the development of supplemental materials that enable even in-class students to conduct their studies and office hours in a distributed way. Innovations within this area like the development and use of video instruction, or the development of web conferencing for office hours and lab tutorial instruction is a significant area of impact on distributed learning.

Hours requested for Curriculum Development funding:

Please enter the amount of one of the following:

- **100 hours maximum for new development.**
- **70 hours maximum for course revision**
- **50 hours for 3-4 credit conversion**
- **other (use if multiple courses addressed in one initiative**

Do not enter any characters other than numbers and a decimal.

How many hours are you requesting? If there are multiple courses addressed in the initiative, please list each course number (or title) and give the number of hours requested for each course.

440

Can this initiative be partially funded?

Yes

Partially funded curriculum development HOURS requested:

Explanation of effect of partial funding:

Will minimally fund course work needed before fall term; additional resources/strategies would have to be developed and identified for winter and spring offerings

Funding Request: Technology Fee