1. Name of person(s) submitting application: Mike McMillan

2. Date: 5/22/2011

3. Division/Department: Information Technology/Computer Information Systems

4. Title of Action Project: Teaching CIS 1113 Problem Solving Using Content from Mathematics and English

5. Describe the Action Project's goals in 100 words or less.

Model building is an important learning strategy. An abstract theory can become more easily understood when a concrete model is built from the theory. In Mathematics and in English, an effective method for building a model is by writing a computer program. The goal of this Action Project is to redesign and implement the Problem Solving course, using a programming language called Logo, so that students are exposed to computational thinking and problem solving skills while studying topics in Mathematics and English, such as verb conjugation, sentence structure, solving algebraic word problems, and working with functions.

6. Identify the AQIP Category the proposed Action Project will most affect or impact:

Category 1: Helping Students Learn

7. How does this project support PTC's mission?

This project supports PTC's mission by providing the student of the Problem Solving course more opportunity for learning by building their skills in Mathematics and English as well as teaching them how to think and solve problems algorithmically. The course will be designed so that students with differing levels of ability will be able to work at their own level, working on problems that match their level of expertise with the subject matter.

8. Describe briefly your department/division/committee’s reasons for taking on this Action Project now - - why the project and its goals are high among your current priorities.

This project is important now because more and more of the students entering PTC are taking courses in Developmental Studies and this project will help teach the student skills they can use in these courses and in future courses they take in English and mathematics. Ultimately, we hope the course will be taken by students in all areas of the college because of the important skills they will learn. For students who are ready to do college-level work in Mathematics and English or are already taking or have taken College Algebra and English Composition, this course content will bolster those skills as well as exposing them to computational and algorithmic problem solving techniques.
9. List the organizational areas -- institutional departments, programs, divisions, or units -- most affected by or involved in this Action Project.

The Computer Information Systems department will be the most involved department in this Action Project, though the project will be asking advice from the Developmental English, Developmental Mathematics, English and Mathematics departments.

10. Name and describe briefly the key organizational process(es) that you expect this Action Project to change or improve.

This course will provide another avenue for our students to learn crucial critical thinking skills they will need to compete in the job market of today and the future.

11. How long will it take to accomplish the project (from kickoff to target completion)?

This project will take approximately two years to complete. It will take eight months to develop the course (summer 2011, Fall 2011) and one and a half years to teach the course, gather data on outcomes, and assess the data.

12. Describe how you plan to monitor how successfully your efforts on this Action Project are progressing.

As the course is being developed, it will be tested on students currently enrolled in the Problem Solving course.

13. Describe the overall "outcome" measures or indicators that will tell you whether this Action Project has been a success or failure in achieving its goals.

For students who are in Developmental Studies courses (and these students are the main focus of the project), we will use results from the Compass test, as is currently being done in their other Developmental Studies courses, as well as an assessment test used to measure their algorithmic/computational thinking skills.

14. What human resources do you anticipate needing and what sort of time commitment will be expected of the participants?

Besides the project leader, the only other human resources needed will be the advice of members of the Developmental English, Developmental Mathematics, English and Mathematics departments.

15. Who will be the project leader(s) and other project team members? (Provide name and title)

Mike McMillan makes up the complete project team.

16. How much money do you think it will cost to accomplish this project? (If possible, detail expenses.)

This project will not cost PTC any money.