1. Project Description.
This proposal is not for a new mathematics course, but for an alternate mode of instruction (hereafter referred to as the “Multi-level class”) for students enrolled in developmental mathematics courses. Students having difficulty with the material and therefore, in jeopardy of not completing the course either drop out, withdraw, fail or receive a D grade. These students hopefully remain in school waiting until the next semester to re-enroll in the course and try again. These students will now be able to transfer into this Multi-level class to remain engaged in learning activities and the opportunity to complete the course, perhaps not by the end of the 15-week semester. This alternate mode of instruction design can also accommodate students wanting to work independently, at their own pace, to quickly complete the material in the developmental courses. Such students will be able to accelerate their developmental course work as quickly as their abilities and motivation will allow them to do so.

Students will work with MATHXL or MyMathLab (MML), a computer software/text resource that provides instruction as well as tutorial for the course. In addition to the instructor, two student assistants will be available in the class to help students. This assistance will allow the instructor time to meet one-on-one with students. In addition to their work on the computer with MATHXL or MML, students will be required to demonstrate their ability to do “pencil and paper” work. Each student will have a customized class plan for their course.

2. New or ongoing project?
This Multi-level class is a new project for WCC beginning fall 2009.

3. Refer to any research that influences or serves as foundation for the project.
According to the AtD data, the pass rate for MATH 21B is 62%, which means 38% of the students enrolled in this course drop out, withdraw, fail or receive a D grade. When students drop or withdraw from their class, most if not all do not engage in learning activities to build their skills until they are able to re-enroll. In MATH 22, the pass rate is 57%, which means 43% do not pass with a C grade or better and must retake the course. A pass rate of 57% in MATH 24 means 43% must try again, and a pass rate of 61% in MATH 25 means 39% of the students must retake the course. Add to this the COMPASS math placement results that reveal approximately 88% of the cohort placed into MATH 25 or lower.

Pearson’s MATHXL or MML are online homework, tutorial, and assessment systems that accompany the developmental course textbooks. A recent report, Making the Grade: A Compendium of Data-Driven Case Studies on the Effectiveness of MyMathlab and MathXL, illustrates the consistently positive impact on the quality of learning and cost reduction in higher education math instruction. The report highlights higher student retention rates, higher pass rates, and/or higher subsequent success rates. For example,
Data from Lone Star College, Montgomery (TX) show a pass rate in Intermediate Algebra from 55% without MyMathlab to 79% with MyMathlab – which reflects a 44% increase.

Use of MyMathlab in Intermediate Algebra at Odessa College (TX) revealed student success (earns C or higher) without MyMathlab at 66% as compared to success (earns C or higher) with MyMathlab at 87%.

Institutions across the country have reported increases in pass rates of 30-40% using MATHXL.

4. List partners in the CC system or explain how the design lends itself to export. This project is a good fit for WCC because our developmental textbooks are all Pearson texts and MyMathlab or Math XL are packaged with our student textbooks. Since this Multi-level class is not a new course, CCAAC action such as New Course Proposal was not necessary. In addition, all sections of a mathematics course use the same textbook. The alternate mode of instruction design can be easily adapted to similar situations on other campuses or with minor modifications. A key component of this design is the customized class plan for each student and the computer-assisted instruction (MathXL).

5. Refer to the Campus and the System Strategic Plan section that demonstrates the relevance of this project.
University of Hawaii System Strategic Plan, 2002-2010:
Goal 1 – Educational Effectiveness and Student Success, Objective 1; and
Goal 2: A Learning, Research, and Service Network, Objective 3;

Community College System/Windward Community College’s Strategic Plan Action Outcomes, November 2008:
CC 1.3 Increase the number and percent of Native Hawaiian students who, if assigned to a developmental intervention, successfully complete that sequence and move on to college-level instruction.
WCC 1.3 Increase the number of Native Hawaiians that complete developmental…math (from 29 to 51) classes to between 83% and 86% by 2015.

CC 2.3 Increase the number and percent of students who, if assigned to a developmental intervention, enroll in and successfully complete that sequence and move on to degree applicable instruction and increase the CCSSEE Active and Collaborative Learning Benchmark.
WCC 2.3 Increase the number of students that complete developmental…math (105 to 178) classes by 84% by 2015.

CC 4.3 Increase by 3% per year the number of degrees and certificates awarded in Science, Technology, Engineering, and Math (STEM) fields.
WCC 4.5 Promote the knowledge, skills, and opportunities that support current and emerging STEM fields and careers by increasing credit and noncredit STEM course enrollment by 3% per year.
WCC 5.5 Based on data submitted in the Annual Assessments/Program Reviews, equip all personnel and college facilities with appropriate technologies and tools for effective communication, teaching, learning, and other professional work and scholarly activities.


6. Discuss how this project promises to sustain itself after funding pulls back. The Multi-level class will become part of the regular teaching load of an instructor. The cost of hiring student tutors for this class will be one additional expense of this class other than the usual expenses of offering any other class. The other expense is the replacement of computers over time. These computers can be placed on the College’s replacement schedule.

7. Indicate the way in which the success or failure of the project will be visible through measurable and reportable outcomes. Students completing their course through this alternate mode of instruction, the length of time it took to complete the course, the number of classes taken in this mode of instruction by students, and the grades earned will be readily available at the end of each semester.

This data will be compared with those available from previous years (without the alternate mode of instruction opportunity). It is likely that the data collected after a few semesters of offering this alternate mode of instruction class will yield a truer picture of effectiveness.

8. How does this project address reduction in delivery costs and time to readiness for students?
Time to readiness for students: Students may enroll in this class to accelerate their developmental course work as quickly as their abilities and motivation will allow them to do so. Students transferring to this class have the opportunity to remain engaged in their course work making better use of their time and allowing them to complete a course at most in one year.

Reduction in delivery costs. A potential reduction in delivery costs may occur in the offering of fewer sections of developmental classes. The reduced need for seats in the developmental classes may be the result of students accelerating their course work and/or students completing their course work in this alternate mode of instruction and therefore not repeating a class 3 or more times.
9. Proposed Budget for WCC Mathematics Multi-level Class Proposal

<table>
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<tr>
<th>Item</th>
<th>Estimated Cost</th>
<th>Total</th>
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<tbody>
<tr>
<td>Computers for class (28 @ $1,201.84)</td>
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<tr>
<td>Student help/tutor ($8.50 per hour x 16 weeks x 3.25 hours/week x 4 tutors)</td>
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<tr>
<td>Budget Total</td>
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10. Include a signature page that indicates the proposal was approved by the campus Chief Academic Officer.

____________________________________  __________
Richard Fulton,                          Date
Vice Chancellor of Instruction