ALAMO COLLEGES

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2012 SAC CCLI Phase 3 4th Annual Report

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Activities and Findings

Background

- SAC engineering math course: ENGR 1377
  - *Introductory Math for Engineering Applications*
  - Free, not for credit course
  - Use WSU course materials
    - Enhancements from UTSA (course notes) and,
    - University. of Toledo (labs 2, 3, 4)
  - Taught by Klaus Bartels, adjunct faculty
    - Student teaching assistant/tutor since April, 2010
  - Initial course offering in spring, 2009 semester
    - Offered every fall and spring semester since

Enrollment and Course Completion Statistics

Calendar Year	Students Initially Enrolled	Students Completing Course	Students Passing Course (Grades)
2009	9	3	2 (B, C)
2010	6	1	1 (C)
2011	4	3	3 (A, B, C)
Spring, 2012	16	1	0
Totals:	35	8	6 (1-A, 2-B, 3-C)

Note: 4 males and 2 females passed the course

Activities and Findings – The "Good"

- Student feedback from course completers
  - Universally positive
  - Rated course very high overall
  - Students strongly agreed:
    - the course was enjoyable (but difficult for some)
    - the course helped their motivation & success in math and engineering classes
    - they learned a lot about engineering applications
    - course was valuable to them & met their expectations
    - they would recommend it to other engineering majors

Activities and Findings – The "Bad"

- Chronic low enrollment & retention
  - Average enrollment: 5 students/semester
  - 23% (8/35) retention rate
  - Techniques used to improve enrollment:
    - Lowered math prerequisite from College Algebra/Trig to Intermediate Algebra
    - Increased marketing (flyers, website banner ads)
    - Spring, 2010: Opened to all five Alamo Colleges
    - Fall, 2011: Opened to STEM high school teachers
  - Initial enrollment improved
    - From 9 in 2009 to 16 in spring, 2012

Activities and Findings – The "Ugly"

- Reasons for low enrollment & retention
  - Not an approved, for credit course
  - Course not part of 2 or 4-yr engr. Curriculum
  - Course not transferable to 4-yr university
  - Not approved as substitute for math prerequisites in physics or engineering courses
  - First course dropped by students when conflicts arise with credited courses
  - Low threshold for students to drop when personal conflicts arise

Activities and Findings – The "Hope"

- SAC ENGR 1377 would be an officially recognized (for credit) SAC course
- ENGR 1377 would be transferable to Texas 4-year universities that are part of CCLI Phase 3
  - University of Texas at San Antonio (UTSA)
  - University of Texas at El Paso (UTEP)
  - Texas A&M-Kingsville (TAMUK).
- SAC received transfer support letters for ENGR 1377 from TAMUK and UTEP in June, 2010

Activities and Findings – The "Reality"

- SAC Curriculum Committee has not approved the course to be for credit
  - Reason: Equivalent course at the 4-year institutions is not included as a required course in their engineering curriculums; i.e. is not required for engineering degree
- SAC engineering math course cannot substitute for math prerequisites for select engineering and physics courses until course is credited

Activities and Findings - Options

- SAC requested course be approved and credited as a unique needs course by Academic Council.
  - Request tabled by Curriculum Committee, March, 2011
    - Lack of sufficient info. proving benefits to students.
  - Department plans to reapply?
- Incorporate major elements of engineering math course in ENGR 1201, Intro. to Engineering
  - Problem: Approx. 41% of engineering freshmen in remedial math
- Offer summer course for STEM HS teachers
  - Continuing Ed. course to improve math skills

Conclusions

- SAC is a strong advocate of CCLI effort
  - Will continue offering course in 4th year
  - Will use new Engr. Math textbook in fall
- Student feedback of benefits encouraging
  - Small sample size to date
- Low enrollment & retention disappointing
- Bottom Line: Crediting and transferability issues must be resolved for effort to ultimately succeed.

To be continued...



May the Force of PowerPoint be With You!