

## WMU-STEP Advisory Board

### Report of 2006-07 Activities

For 2006-07, a total of 310 students (13 A&S students and 297 CEAS students) were placed into learning communities. For CEAS, the number of learning communities with an anchor class was increased from 4 in 2005-06 to 13 in 2006-07.

#### *1. Successful Completion Rates of 1<sup>st</sup> Year STEM Courses for the 2006-07 FYEE Learning Community*

The successful completion rates (Grade >C) of 1<sup>st</sup> Year STEM courses for the 2006-07 FYEE Learning Community participants were compared with non-FYEE students in the table below. Students with a grade equal to or greater than C is considered to have successfully completed the course; withdrawal from a class is not considered successful. The comparison group consisted of non-FYEE students, including first-year as well as returning WMU students, enrolled in the course.

Course	Enrollment		% Grade $\geq$ C			
	FYEE	Comparison	FYEE	Comparison	p-value	Significantly different at $p = 0.1$
General Chemistry I (Fall 06)	184	513	78.8	71.7	0.066	<b>Yes</b>
General Chemistry I (Sp 07)	73	347	82.2	76.4	0.294	No
Physics I-Calculus base (Sp 07)	91	108	94.5	81.5	0.006	<b>Yes</b>
Physics I-Algebra base (Sp 07)	7	105	85.7	51.4	0.083	<b>Yes</b>
Calculus I-Sci & Engr. (Fall 06)	85	93	76.5	44.1	0.000	<b>Yes</b>
Calculus I-General (Fall 06)	21	151	85.7	63.6	0.045	<b>Yes</b>
Calculus I-Sci & Engr. (Sp 07)	66	52	68.2	55.8	0.191	No
Calculus II-Sci & Engr. (Sp 07)	57	49	77.2	57.1	0.028	<b>Yes</b>
Calculus II-General (Sp 07)	18	106	94.4	51.9	0.000	<b>Yes</b>
Pre-Calculus (Fall 06)	92	335	85.9	72.8	0.010	<b>Yes</b>
Pre-Calculus (Spring 07)	49	199	67.3	63.3	0.375	No
Algebra II (Fall 06)	59	343	81.4	63.8	0.009	<b>Yes</b>
Algebra I (Fall 06)	15	840	73.3	56.7	0.212	No
Technical Writing (Fall 06)	242	110	86.8	60.9	0.000	<b>Yes</b>
Engineering Graphics (Fall 06)	189	155	87.3	66.5	0.000	<b>Yes</b>

*Source: Grade Distribution by Course, Cognos Report 89*

## 2. 2<sup>nd</sup> Semester Retention Rates

The 2<sup>nd</sup> Semester Retention Rates for the STEP and CEAS Cohort are shown in table below:

Year	Follow Semester	Return to STEM	Return to WMU	Not Enrolled at WMU
Fall 2006-STEP	Spring 2007	87.4% (271/310)*	7.1% (22/310)*	5.5% (17/310)*
	CEAS only	87.9% (261/297)	7.4% (22/297)	4.7% (14/297)
	A&S only	76.9% (10/13)	0% (0/13)	23.1% (3/13)

\* Include both A&S and CEAS

Source: Student Academic and Institutional Research

Note:

- For 2006-07, the 2<sup>nd</sup> Semester Retention Rate to WMU for the overall 2006 STEP Cohort of 94.5% and for the STEP-CEAS Cohort of 95.3% are higher than the university-wide rate of 91.6% and they are statistically significant ( $p=0.035$  and  $p=0.018$ , respectively).
- Of the 18 students in the high-risk group in 2006, 14 returned to CEAS (77.8%) and 3 returned to WMU to pursue another program (16.7%). One has left WMU (his GPA is 2.10).

For comparison purposes, the 2<sup>nd</sup> Semester Retention Rates for the 2005-06 cohort are given below:

Year	Follow Semester	Return to STEM	Return to WMU	Not Enrolled at WMU
Fall 2005-STEP	Spring 2006	86.7% (241/278)*	8.6% (24/278)*	4.7% (13/278)*
	CEAS only	87.5% (230/263)	7.6% (20/263)	4.9% (13/263)
	A&S only	73.3% (11/15)	26.7% (4/15)	0% (0/15)

\* Include both A&S and CEAS

Note: For 2005-06, the 2<sup>nd</sup> Semester Retention Rate to WMU for the CEAS cohort of 95.1% is higher than the university-wide retention rate of 91.5% and it is statistically significant ( $p=0.021$ ).

## 3. Preliminary 2<sup>nd</sup> Year Retention Rate

Based on the Cognos report ran in mid-July, 2007 of the 2006 cohort who have registered for classes for Fall Semester 2007, the preliminary 2<sup>nd</sup> year retention rates of the CEAS cohort to CEAS is 71.6% (212 out of 296) and to WMU is 81.4% (241 out of 296); the retention rates of the A&S cohort to mathematics and science is 30.8% (4 out of 13) and to WMU is 46.1% (6 out of 13).

The preliminary 2<sup>nd</sup> year retention rate to WMU for the 2006-07 CEAS cohort of 81.4% is higher than the university-wide 2<sup>nd</sup> year retention rate of the comparison group of first-time first-year students of 76.0% (2,463 out of 3,239) and is statistically significant ( $p=0.039$ ). The university-wide 2<sup>nd</sup> year retention rate for the comparison group is based on numbers (as of July 6, 2007) provided by Jim Gilchrist of the Student Academic and Institutional Research.

For comparison purposes, the 2<sup>nd</sup> Year Retention Rate for the 2005-06 CEAS Learning Communities is give below:

	Enrollment (No of Students) Fall 2005		2nd Year Return Rate, % Fall 2006		Significance level
	LC	Comparison**	LC	Comparison**	
<b>Retained in CEAS</b>	<b>263</b>	<b>459</b>	<b>68.1</b>	<b>60.2</b>	<b>0.015</b>
Retained in WMU	263	459	76.4	74.1	0.239
<b>Directly Mentored LC Retained in CEAS</b>	<b>71</b>	<b>459</b>	<b>77.5</b>	<b>60.2</b>	<b>0.001</b>
<b>Directly Mentored LC Retained in WMU</b>	<b>71</b>	<b>459</b>	<b>84.5</b>	<b>74.1</b>	<b>0.014</b>

\*\* The comparison group consists of averages of first-time first-year CEAS students from 2000-2004.

The preliminary 2<sup>nd</sup> Year Retention Rate of the 2006 cohort of at-risk students (Algebra I/Developmental Math) is 66.7% (12 out of 18) to CEAS and 88.9 (16 out of 18) to WMU. [One student transferred out in Spring Semester 2007 and one student was academically dismissed.] Of those retained within CEAS, four remain in engineering and 8 major in engineering technology.

#### 4. Preliminary 3<sup>rd</sup> Year Retention Rates of the 2005-06 Cohort

The preliminary 3<sup>rd</sup> Year Retention Rates of the 2005-06 CEAS Cohort, based on Fall Semester 2007 registration (on August 8, 2007), is 54.1% to CEAS and 70.6% to WMU. This compares to the historic 3<sup>rd</sup> Year Retention Rates of STEM majors, averaged from 1998 to 2004, of 40.9% to STEM and 63.3% to WMU\*. (The institutional 3<sup>rd</sup> Year Retention Rate at WMU is 65.4% over the same period.)

*Source: CSRDE Retention Survey*

The drop in retention rates of the 2005-06 CEAS cohort of 68.1% for 2<sup>nd</sup> Year Retention to CEAS and 54.1% for 3<sup>rd</sup> Year Retention to CEAS is probably due to the gateway engineering science courses typically taken by students during the third or fourth semesters (Statics, Dynamics, Mechanics of Materials, Circuit Analysis).