UNIVERSITY OF WYOMING

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Date: March 28, 2005

To: Dean Gus Plumb

Engineering Dept Heads Dean Oliver Walter Sivaguru Sritharan, Math Dean Roddick, Chemistry Susan Frye, English

Rollin Abemethy, Academic Affairs

Re: Updated results of Engineering's Power Groups

Attached please find a packet of information that describes the assessment that we have been doing for the past 10 years for the Engineering Power Groups.

- The first page gives details on the number of students involved and the results of each fall semester. You
 will note that we have continued to include Power Groups for students who only qualified to take MATH
 1450 (instead of MATH 2200).
- The associated graphs are split into two sections one dealing with the Calculus-based Power Groups and one dealing with the Algebra & Trig-Based Power Groups.
 - · Calculus-Based Power Groups
 - Three comparative graphs show various academic measures that we use to determine success or failure (Semester GPA, Semester Hours Earned, and Fall to Spring Retention within Engineering) as a function of time. The Power Group students have consistently performed higher on these measures than the non-Power Group students. For Fall 2004, the GPA for the Power Group students was slightly below that for the non-Power Group Students.
 - The next graph shows the Fall 2004 grades in the various Power Group classes (MATH 2200, ES 1060, CHEM 1020/1050, ENGL 1010, ES 1000, COSC 1030, and COSC 1010) for the Calculus-based Power Groups compared to non-Power Group students.
 - The last three graphs show the 10-year average of each of the three success measures for various constituent groups (male, female, minority students, majority students). You will note that the Power Group concept has been very successful for minority students.
 - Algebra & Trig-Based Power Groups
 - Three comparative graphs show various academic measures that we use to determine success or failure (Semester GPA, Semester Hours Earned, and Fall to Spring Retention within Engineering) as a function of time.
 - For the second consecutive year, the non-Power Group students have outperformed the Power Group students (at least with regard to the fall semester GPA). In fact, I'm concerned that the fall semester GPA for the Power Group students was less than 2.00.
 - The next graph shows the Fall 2003 grades in the various Power Group classes (MATH 1450, CHEM 1020/1050, ENGL 1010, ES 1000, ECON 1200, and COSC 1010) for the Algebra & Trigbased Power Groups compared to the non-Power Group students.
 - It should be noted that the Power Group average for COSC 1010 was based on 4 students and the non-Power Group average represents a single student.

Overall, this project continues to show academic benefits to its participants. Thanks for your continued support of this effort.

cc: Susan McCormack

Analysis of Power Group Project (Blocked Scheduling) Date: March 25, 2005

(Grades include W's treated the same as F's)

Date. Wardii 25, 2005	Fall 1995 Fall 1996			00	Fall 1997 Fall 1998			Fall 1999		E-II 00	000	E-II 00	104	Fall 2002		Fall 2003		E-II 00	0.4	
0-1	# %		# %		# %		# %		# %		Fall 2000		Fall 2001		# Fall 20	%	# %		Fall 2004	
Category		%	400	<u>%</u>	# 100	<u>%</u>	470	%	n	%	710	%	# 262	%	n	<u>%</u> _	750	%		<u>%</u>
# of students completing Orientation	217	07.7	189	07.4	192	07.00/	179	00.00/	207	07.00/	212	00.00/	262	07.00/	234	05.70/	259	05.00/	254	0.4.00/
# who enrolled as engineering students	212	97.7	184	97.4	188	97.9%	176	98.3%	202	97.6%	204	98.6%	255	97.3%	224	95.7%	248	95.8%	241	94.9%
# who chose not to enroll at UW or as engr students	5	2.3	5	2.6	4	2.1%	3	1.7%	5	2.4%	8	3.9%	7	2.7%	10	4.3%	11	4.2%	13	5.1%
Of those who enrolled as engineering students:																				
# who enrolled in a Math Class	206	97.2	177	96.2	182	96.8%	173	98.3%	198	98.0%	199	98.5%	249	97.6%	218	97.3%	238	96.0%	230	95.4%
# who did not enroll in a Math Class	3	1.4	3	1.6	2	1.1%	0	0.0%	1	0.5%	2	1.0%	2	0.8%	4	1.8%	7	2.8%	6	2.5%
# who withdrew from all of their classes	3	1.4	4	2.2	4	2.1%	3	1.7%	3	1.5%	3	1.5%	4	1.6%	2	0.9%	3	1.2%	5	2.1%
Of those who enrolled in a Math Class																				
# who enrolled in less than Algebra	7	3.4	10	5.6	14	7.7%	13	7.5%	8	4.0%	16	8.1%	36	14.5%	28	12.8%	22	9.2%	22	9.6%
# who enrolled in Algebra and/or Trigonometry (prior to Fall 99)	58	28.2	38	21.5	39	21.4%	39	22.5%	Ü	4.070	10	0.170	00	14.070	20	12.070		3.270	22	3.070
# who enrolled in Algebra or Trigonometry	00	20.2	00	21.0	00	21.470	00	22.070	8	4.0%	7	3.5%	26	10.4%	14	6.4%	13	5.5%	16	7.0%
# who enrolled in Algebra and Trigonometry (MATH 1450)									48	24.2%	48	24.2%	49	19.7%	52	23.9%	66	27.7%	39	17.0%
# who enrolled in Calculus I	114	55.3	97	54.8	83	45.6%	91	52.6%	90	45.5%	46 88	24.2% 44.4%	49 86	34.5%	88	40.4%	101	42.4%	103	44.8%
# who enrolled in Calculus II or III	27	13.1	32	18.1	43	23.6%	30	17.3%	44	22.2%	40	20.2%	52	20.9%	36	16.5%	35	14.7%	50	21.7%
Of those who enrolled in Calculus I																				
# who were placed via the Power Group Schedule	67	58.8	67	69.1	51	61.4%	52	57.1%	61	67.8%	61	67.8%	53	61.6%	54	61.4%	61	60.4%	60	58.3%
# who were placed via their own scheduling	47	41.2	30	30.9	32	38.6%	39	42.9%	29	32.2%	27	30.0%	33	38.4%	34	38.6%	40	39.6%	43	41.7%
Of those who enrolled in Algebra and Trigonometry																				
# who were placed via the Power Group Schedule									16	33.3%	20	41.7%	16	32.7%	26	50.0%	26	39.4%	20	51.3%
# who were placed via their own scheduling									32	66.7%	28	58.3%	33	67.3%	25	48.1%	40	60.6%	19	48.7%
Results of Power Group Project for Calculus Students	Fall 19		Fall 19		Fall 19		Fall 199		Fall 19		Fall 20									
(Analysis is only of students enrolled in Calculus I)	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group
Average Fall GPA	2.82	2.72	2.85	2.99	2.82	2.62	2.68	2.60	2.99	2.79	2.80	2.68	2.93	2.76	2.86	2.95	2.90	2.90	2.74	2.79
Average Fall Hours Earned	14.72	14.26	14.87	14.17	14.95	12.80	13.96	13.41	14.54	13.98	14.04	13.61	14.85	13.7	14.24	14.25	14.13	14.11	14.02	13.76
% Retained in engineering from Fall to Spring	95.5	85.1	86.6	93.3	82.4	71.9	76.9	69.2	90.2	93.1	83.6	92.6	88.7	87.9	85.2	79.4	86.9	90.0	88.3	90.7
Average Calculus I Grade	2.43	2.19	2.58	2.67	2.41	2.25	2.12	2.18	2.72	2.76	2.26	1.85	2.60	2.21	2.31	2.53	2.43	2.58	2.40	2.42
Average ES 1060 Grade	2.91	2.31	2.56	2.45	2.72	2.37	2.73	2.39	3.05	2.61	2.91	2.73	3.03	3.07	3.16	3.19	2.85	2.64	2.52	2.51
Average Chemistry Grade	2.54	2.80	2.56	2.41	2.88	2.76	2.60	2.58	2.64	2.50	2.73	2.50	2.81	2.77	2.87	3.13	2.95	2.79	2.66	2.79
Average English Grade	2.86	3.10	2.80	3.30	2.86	2.70	3.13	3.17	3.17	3.00	3.33	3.50	3.09	2.40	2.68	3.00	2.79	3.12	2.88	2.75
Average ES 1000 Grade	3.87	3.51	3.62	3.64	3.78	3.31	3.63	3.84	3.72	3.41	3.75	3.27	3.60	3.54	3.69	3.62	3.48	3.42	3.58	3.36
Average COSC 1030 Grade	0.01	0.01	0.02	0.01	0.70	0.01	0.00	0.01	02	0	2.36	2.00	2.28	2.19	2.44	1.64	1.85	3.29	2.22	2.60
Average COSC 1010 Grade											2.00	2.00	2.20	2.10	2.77	1.04	1.00	0.20	3.14	2.50
(Grades include W's treated the same as F's)																			3.14	2.50
Results of Power Group Project for Algebra & Trig Students									Fall 19	999	Fall 20	000	Fall 20	001	Fall 20	002	Fall 20	103	Fall 20	04
(Analysis is only of students enrolled in MATH 1450)								-	Power	Non-Power		Non-Power								
(7 mary side to string of staderite string in 1997)									Group	Group										
Average Fall GPA								_	2.70	2.45	2.74	2.39	3.02	2.64	2.78	2.25	2.45	2.65	1.97	2.32
Average Fall Hours Earned									14.40	14.20	15.47	15.02	15.25	14.11	15.42	13.42	14.71	14.47	12.75	12.68
% Retained in engineering from Fall to Spring									93.8	75.0	100.0	85.7	81.2	81.8	76.9	76.0	80.8	75.0	90.0	78.9
Average MATH 1450 Grade									3.00	2.84	2.70	2.32	2.81	2.24	2.65	1.92	2.35	2.45	1.55	2.05
Average Chemistry Grade									1.87	1.58	2.25	1.82	1.81	2.07	2.58	1.95	2.16	2.32	1.37	1.71
Average Criemistry Grade Average English Grade									2.00	2.33	3.13	2.83	3.19	2.07	2.56	3.00	2.30	2.32	2.37	2.67
Average English Grade Average ES 1000 Grade									3.75	2.33 3.25	3.90	3.50	4.00	3.70	3.19	3.00	3.15	3.41	3.20	3.05
Average ECON 1200 Grade Average ECON 1200 Grade									3.13	3.23	3.90	3.50	3.43	3.27	2.65	2.67	2.88	2.55	2.43	2.54
											3.07	3.14	3.43	3.21	∠.00	2.07	2.00	2.55		
Average COSC 1010 Grade																			0.50	3.00

Analysis of Power Group Project (Blocked Scheduling) - WITHOUT COMPUTER SCIENCE/MIS MAJORS Date: March 25, 2005

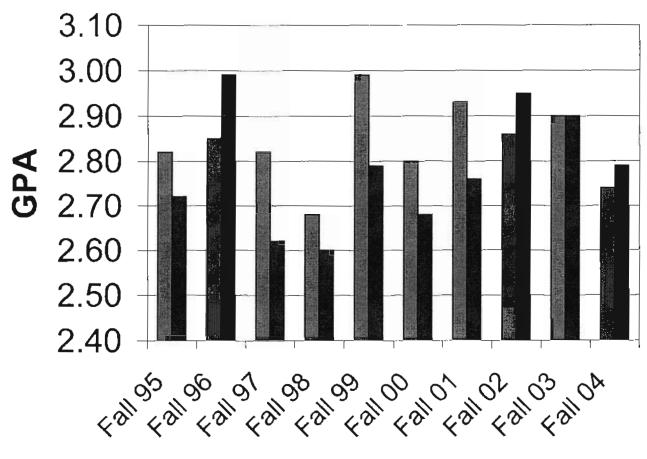
(Grades include W's treated the same as F's)

Date. Wardt 25, 2005	Fall 19	Fall 1995 Fall 1996			Fall 1997 Fall 1998			98	Fall 1999		Fall 2000		Fall 2001		Fall 2002		Fall 2003		Fall 2004	
Category	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
# of students completing Orientation	217		189		192		179		207		212		212		205		234		227	
# who enrolled as engineering students	212	97.7	184	97.4	188	97.9%	176	98.3%	202	97.6%	204	98.6%	207	97.6%	198	96.6%	223	95.3%	217	95.6%
# who chose not to enroll at UW or as engr students	5	2.3	5	2.6	4	2.1%	3	1.7%	5	2.4%	8	3.9%	5	2.4%	7	3.4%	11	4.7%	10	4.4%
Of those who enrolled as engineering students:																				
# who enrolled in a Math Class	206	97.2	177	96.2	182	96.8%	173	98.3%	198	98.0%	199	98.5%	204	98.6%	193	97.5%	216	96.9%	209	96.3%
# who did not enroll in a Math Class	3	1.4	3	1.6	2	1.1%	0	0.0%	1	0.5%	2	1.0%	0	0.0%	3	1.5%	6	2.7%	4	1.8%
# who withdrew from all of their classes	3	1.4	4	2.2	4	2.1%	3	1.7%	3	1.5%	3	1.5%	3	1.4%	2	1.0%	1	0.4%	4	1.8%
Of those who enrolled in a Math Class																				
# who enrolled in less than Algebra	7	3.4	10	5.6	14	7.7%	13	7.5%	8	4.0%	16	8.1%	22	10.8%	24	12.4%	20	9.3%	19	9.1%
# who enrolled in Algebra and/or Trigonometry (prior to Fall 99)	58	28.2	38	21.5	39	21.4%	39	22.5%												
# who enrolled in Algebra or Trigonometry									8	4.0%	7	3.5%	21	10.3%	8	4.1%	12	5.6%	16	7.7%
# who enrolled in Algebra and Trigonometry (MATH 1450)									48	24.2%	48	24.2%	43	21.1%	47	24.4%	59	27.3%	32	15.3%
# who enrolled in Calculus I	114	55.3	97	54.8	83	45.6%	91	52.6%	90	45.5%	88	44.4%	76	37.3%	80	41.5%	94	43.5%	93	44.5%
		13.1		18.1	43			17.3%	44						34		31		49	
# who enrolled in Calculus II or III	27	13.1	32	18.1	43	23.6%	30	17.3%	44	22.2%	40	20.2%	42	20.6%	34	17.6%	31	14.4%	49	23.4%
Of those who enrolled in Calculus I # who were placed via the Power Group Schedule	67	58.8	67	69.1	51	61.4%	52	57.1%	61	67.8%	61	67.8%	49	64.5%	50	62.5%	55	58.5%	53	57.0%
	47		30		32		39						27		30		39			
# who were placed via their own scheduling	47	41.2	30	30.9	32	38.6%	39	42.9%	29	32.2%	27	30.0%	21	35.5%	30	37.5%	39	41.5%	40	43.0%
Of those who enrolled in Algebra and Trigonometry # who were placed via the Power Group Schedule									16	33.3%	20	44.70/	16	07.00/	24	E4 40/	21	35.6%	15	46.9%
												41.7%		37.2%		51.1%				
# who were placed via their own scheduling									32	66.7%	28	58.3%	27	62.8%	23	48.9%	38	64.4%	17	53.1%
	F !! 40	0.5	E !! 10	00	F II 40	~~	F 404		F !! 40		F # 00		F # 00		F 11 00		F # 00	00	F 00	
Results of Power Group Project for Calculus Students	Fall 1995		Fall 1996		Fall 1997		Fall 1998		Fall 1999		Fall 20		Fall 2001		Fall 2002		Fall 2003		Fall 2004	
(Analysis is only of students enrolled in Calculus I)	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group	Power Group	Non-Power Group
Average Fall GPA	2.82	2.72	2.85	2.99	2.82	2.62	2.68	2.60	2.99	2.79	2.80	2.68	2.98	2.83	2.89	2.99	2.87	2.88	2.73	2.76
Average Fall Hours Earned	14.72	14.26	14.87	14.17	14.95	12.80	13.96	13.41	14.54	13.98	14.04	13.61	15.08	13.81	14.1	14.25	13.91	14.06	14.09	13.56
% Retained in engineering from Fall to Spring	95.5	85.1	86.6	93.3	82.4	71.9	76.9	69.2	90.2	93.1	83.6	92.6	89.8	85.2	86.0	83.3	87.3	89.7	90.6	90.0
Average Calculus I Grade	2.43	2.19	2.58	2.67	2.41	2.25	2.12	2.18	2.72	2.76	2.26	1.85	2.65	2.22	2.38	2.60	2.42	2.54	2.43	2.38
Average ES 1060 Grade	2.91	2.31	2.56	2.45	2.72	2.37	2.73	2.39	3.05	2.61	2.91	2.73	3.03	3.07	3.16	3.19	2.85	2.64	2.52	2.47
Average Chemistry Grade	2.54	2.80	2.56	2.41	2.88	2.76	2.60	2.58	2.64	2.50	2.73	2.50	2.86	2.81	2.92	3.15	2.94	2.79	2.72	2.78
Average English Grade	2.86	3.10	2.80	3.30	2.86	2.70	3.13	3.17	3.17	3.00	3.33	3.50	3.17	3.33	2.68	3.50	2.77	3.14	2.96	3.00
Average ES 1000 Grade	3.87	3.51	3.62	3.64	3.78	3.31	3.63	3.84	3.72	3.41	3.75	3.27	3.71	3.59	3.68	3.50	3.51	3.46	3.55	3.32
Average COSC 1030 Grade	3.07	3.51	3.02	3.04	3.70	3.31	5.05	3.04	5.72	3.41	2.36	2.00	2.07	2.10	2.33	1.73	1.85	3.29	2.22	2.60
											2.30	2.00	2.07	2.10	2.33	1.73	1.00	3.29	2.22	2.60
Average COSC 1010 Grade (Grades include W's treated the same as F's)																				
Results of Power Group Project for Algebra & Trig Students									Fall 19	99	Fall 20	000	Fall 20	101	Fall 20	102	Fall 20	03	Fall 20	04
(Analysis is only of students enrolled in MATH 1450)								-	Power	Non-Power		Non-Power								
									Group	Group										
Average Fall GPA								-	2.70	2.45	2.74	2.39	3.02	2.67	2.82	2.29	2.66	2.61	2.39	2.26
Average Fall Hours Earned									14.40	14.20	15.47	15.02	15.25	13.91	15.58	13.58	14.78	14.47	14.94	12.88
% Retained in engineering from Fall to Spring									93.8	75.0	100.0	85.7	81.2	77.8	79.2	73.9	85.7	78.9	86.7	82.4
Average MATH 1450 Grade									3.00	2.84	2.70	2.32	2.81	2.26	2.79	2.00	2.62	2.42	2.07	2.00
Average Chemistry Grade									1.87	1.58	2.25	1.82	1.81	1.96	2.64	1.95	2.35	2.30	1.57	1.85
Average English Grade									2.00	2.33	3.13	2.83	3.19	2.50	2.95	3.00	2.53	2.60	2.78	2.50
Average ES 1000 Grade									3.75	3.25	3.90	3.50	4.00	3.81	3.25	3.13	3.48	3.38	3.33	2.94
Average ECON 1200 Grade											3.07	3.14	3.43	3.31	2.62	2.67	2.88	2.50	2.43	2.54
Average COSC 1010 Grade																				
(Grades include W's treated the same as F's)																				

Calculus-Based

Power Groups

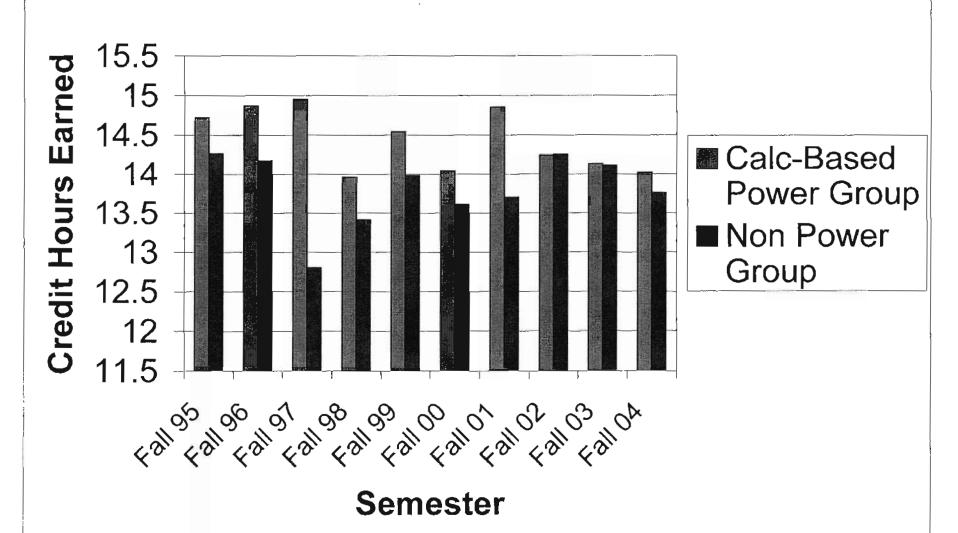




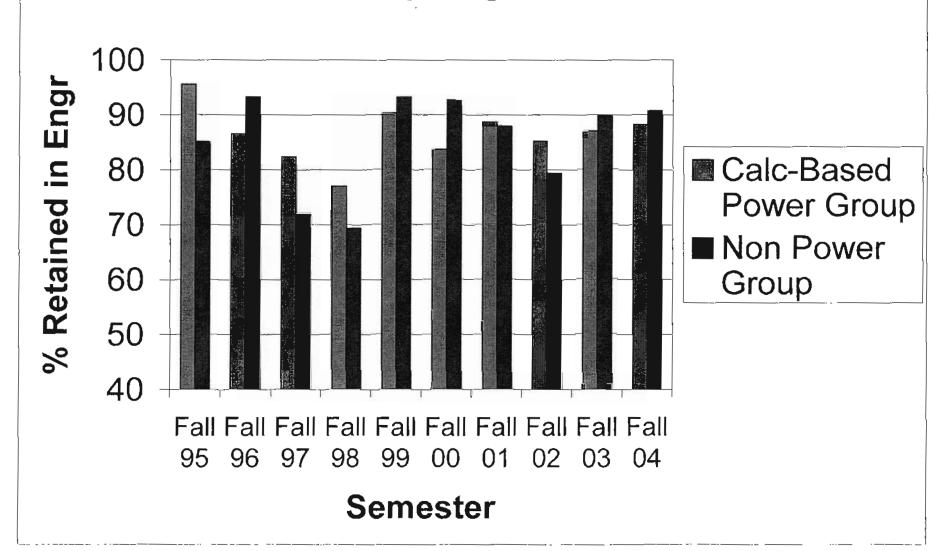
- Calc-Based Power Group
- Non Power Group

Semester

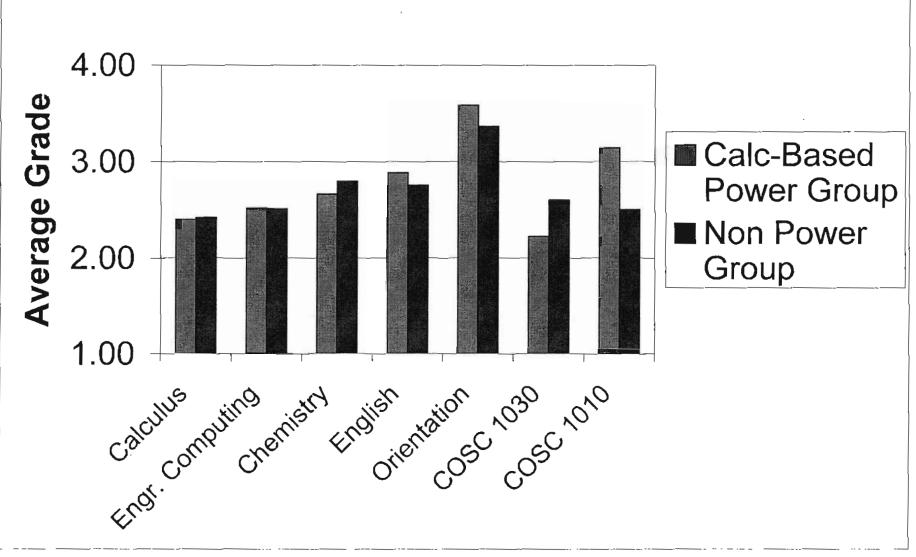
Fall Sem Hours Earned

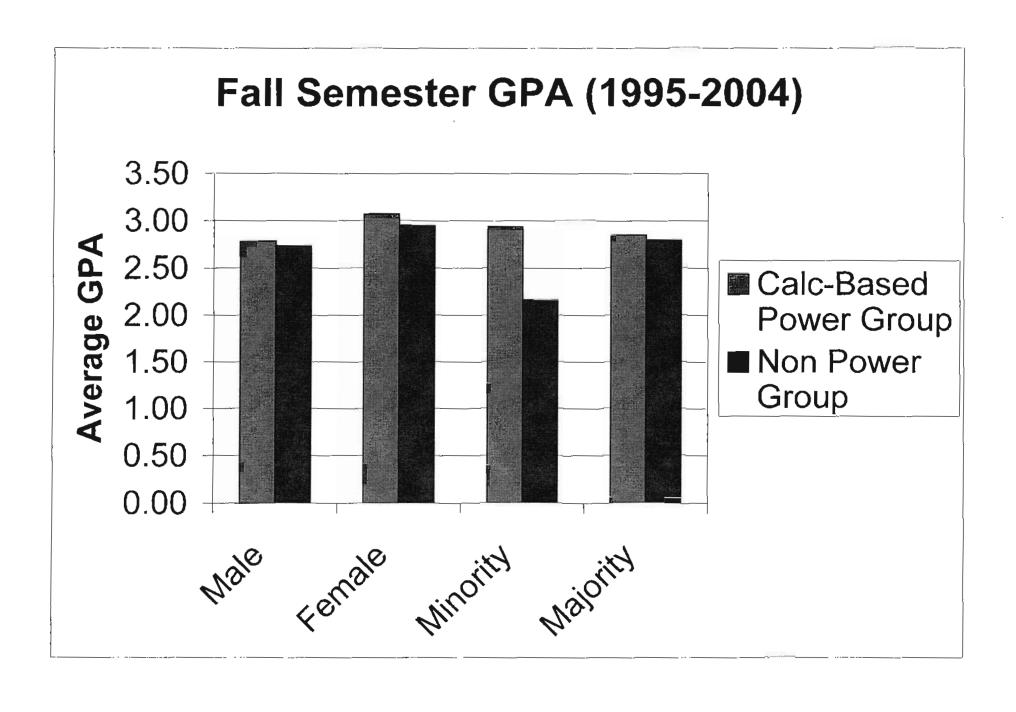


Fall to Spring Retention

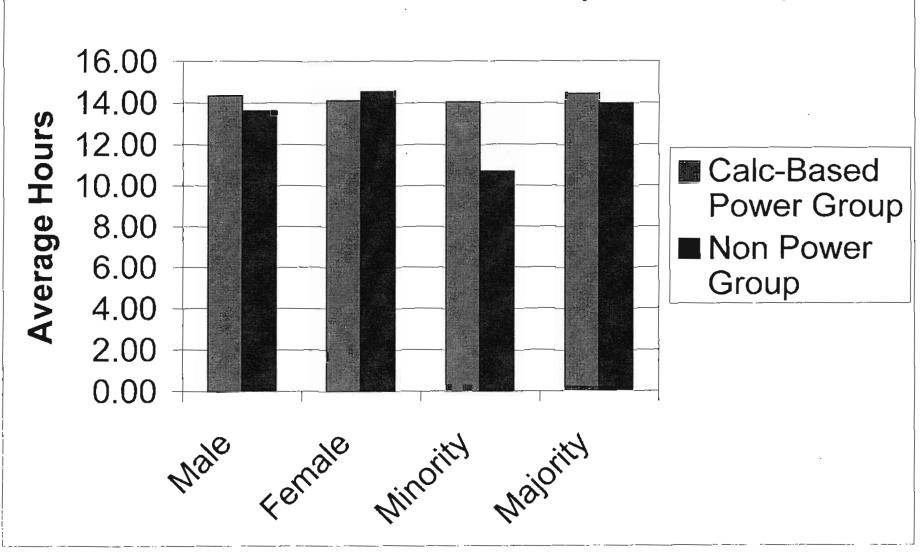


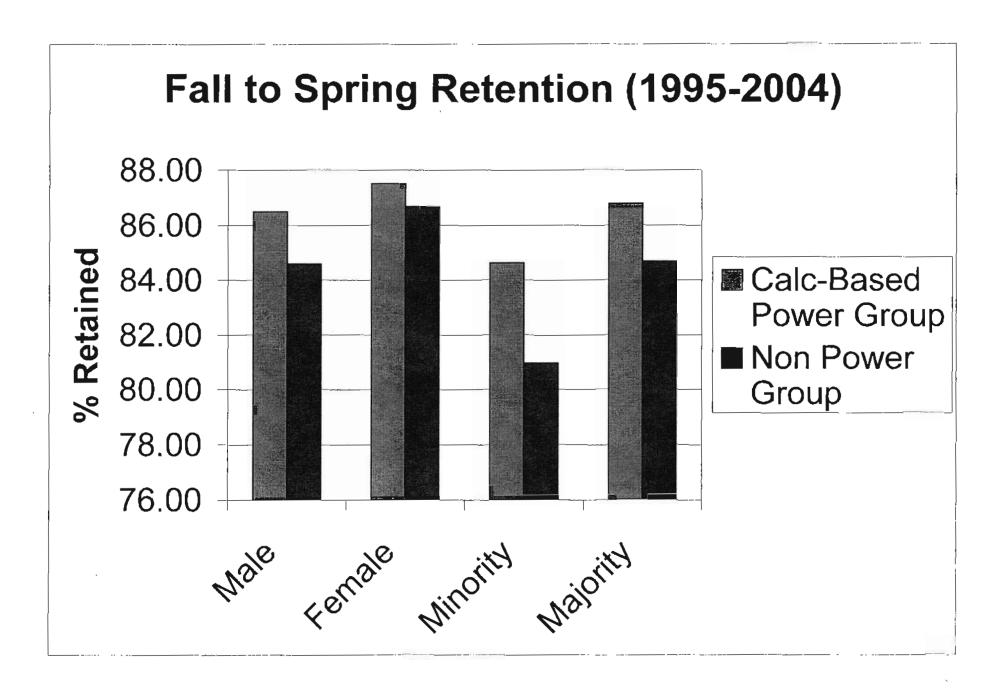






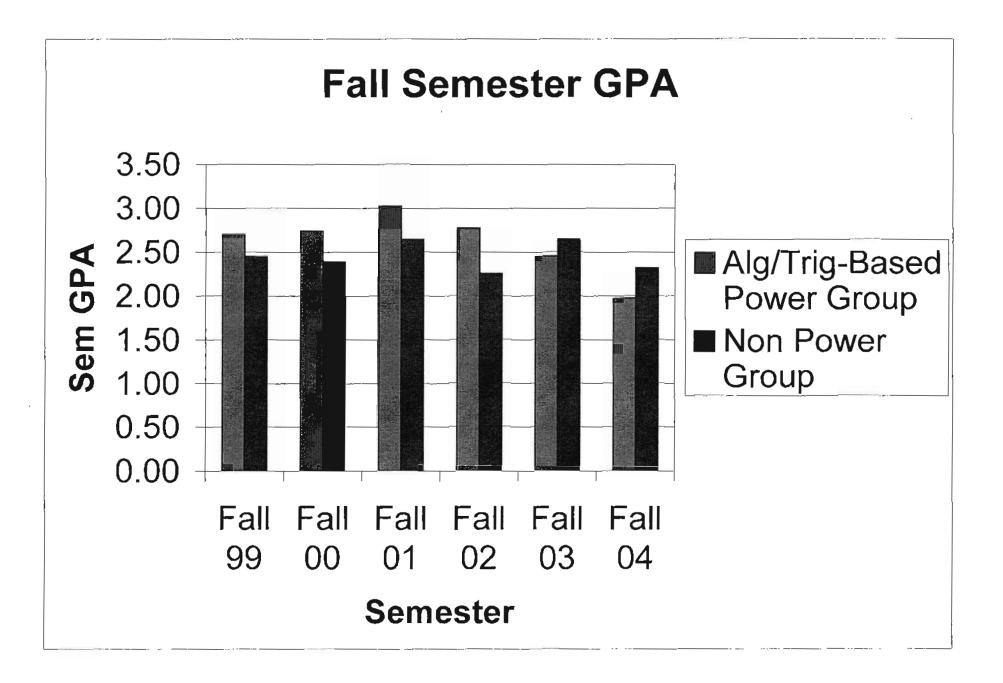
Fall Sem Hours Earned (1995-2004)



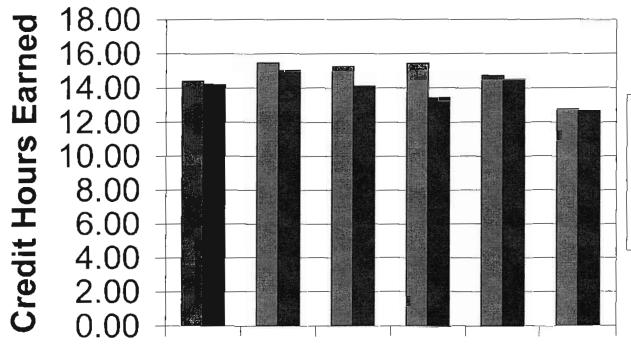


Algebra/Trig-Based

Power Groups



Fall Sem Hours Earned



- Alg/Trig-Based Power Group
- Non Power Group

Fall Fall Fall Fall Fall 99 00 01 02 03 04

Semester



