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**California Community College Collaborative (C4)
Policy Paper Series:**

**Investigating Who Succeeds and What “Success” Means
for California Community Colleges?
A Statewide Study of Student Enrollments, Success Rates, and Award Attainment
with Emphasis on Vocational Education Programs”**

Josh M. Beach

Presented at Association for the Study of Higher Education Conference
Louisville, Kentucky
Nov 7-10, 2007

California Community College
Awards & Transfer Rates
1993 - 2006

Figure 2: California Statewide Awards, 1993 to 2006

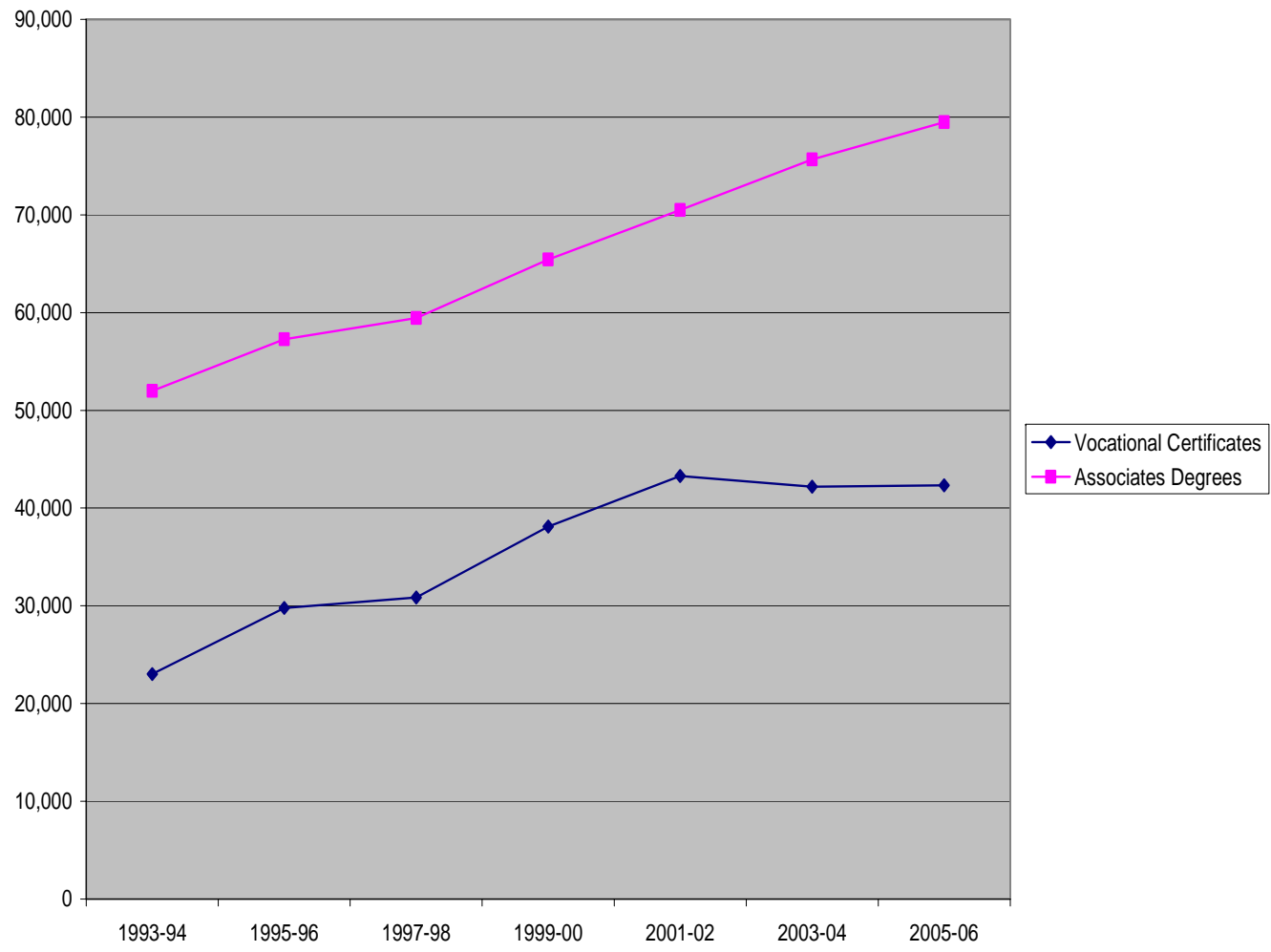


Figure 7: Award Growth Rates, 1995-2006

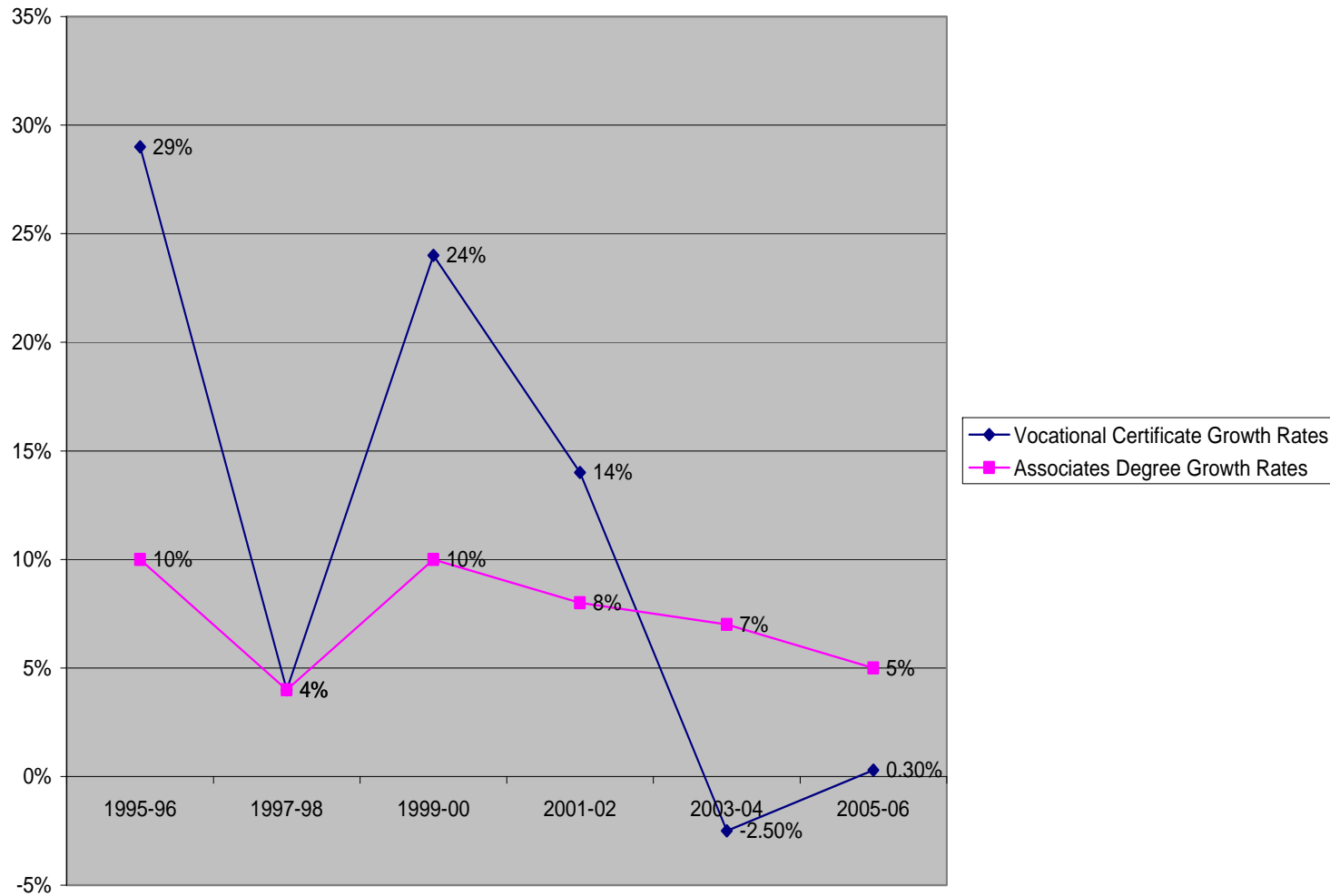
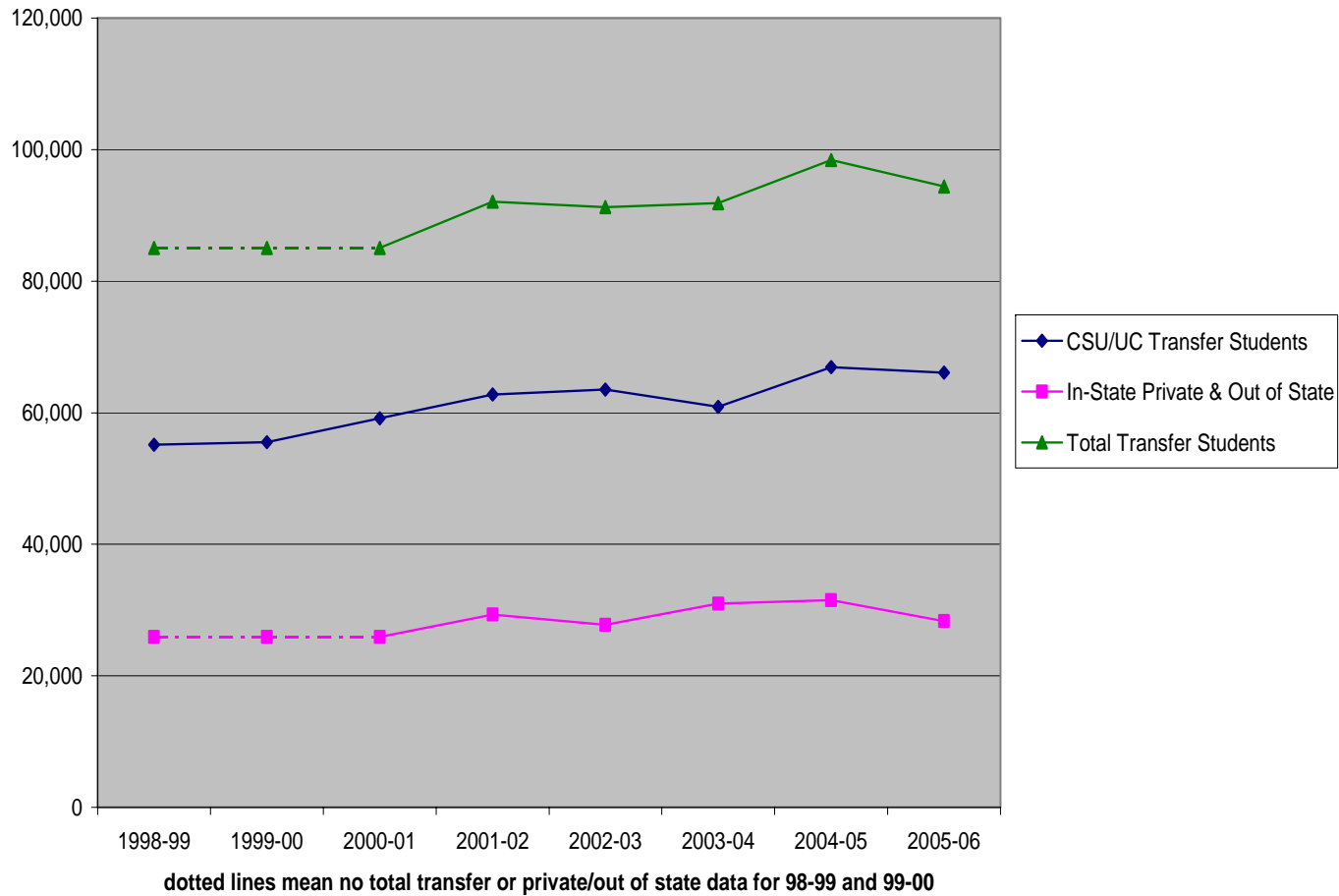


Figure 8: California Community College Transfer Rates to CSU & UC, 1998-2006

(Data Source: California Postsecondary Education Commission, 2005;
Chancellor's Office California Community Colleges ARCC 2007 Report, 2007)



The Vocationalization of
California Community College
Curriculum, 1993 – 2006:
Vocational Certificates across the Curriculum
by % of Total Credentials Awarded

Terminology

“Vocational” = More than 55% of credentials awarded were vocational certificates

“Academic” = More than 55% of credentials awarded were associates degrees

“Hybrid” = Mixed amount of certificates and degrees awarded, between 46% and 54%

“Vocationalization” = Curricular Area awards increased levels of vocational certificates

Figure 3: Academic, Hybrid, and Vocational Curricula, 1993-2006

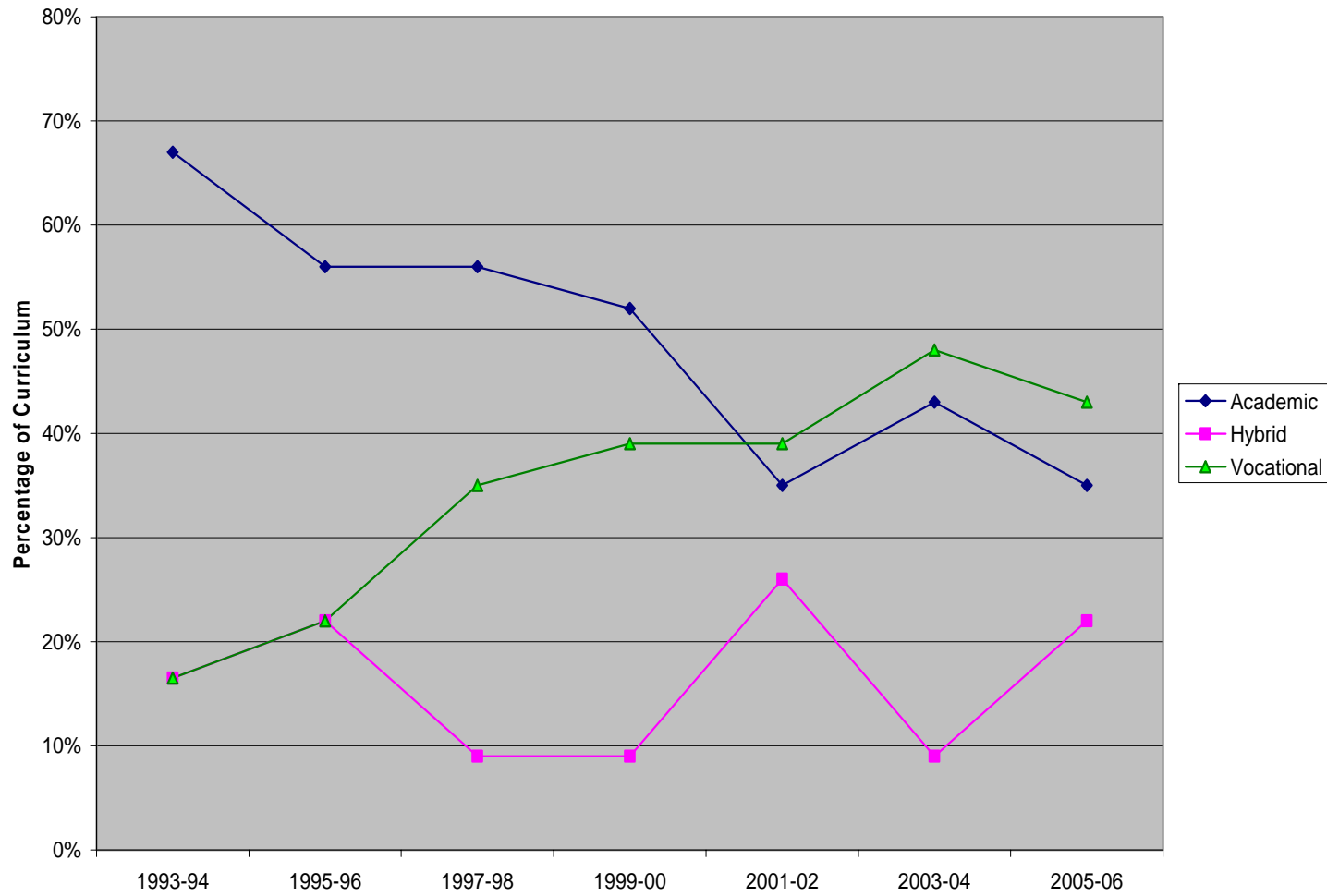
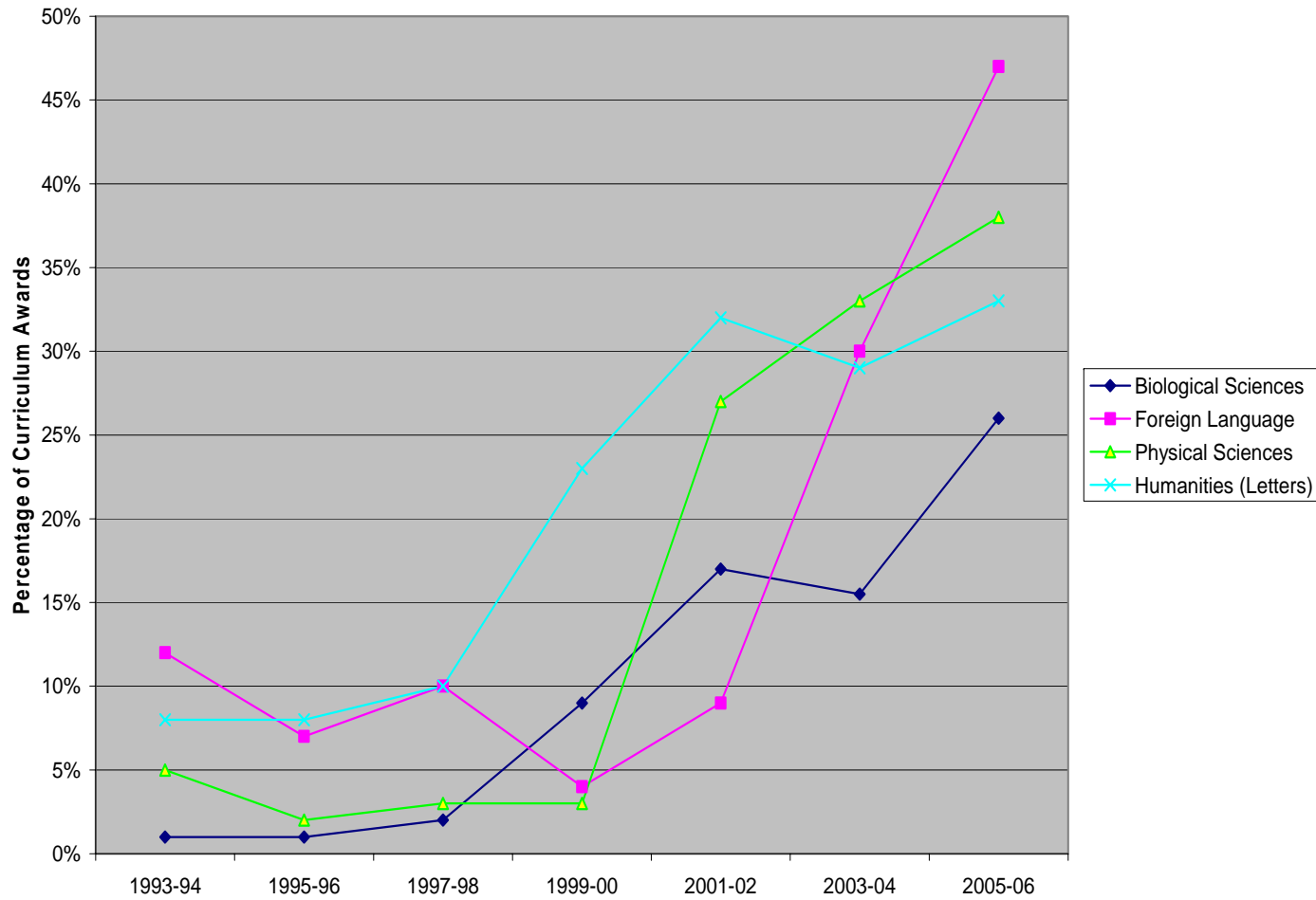


Figure 4: Vocationalization of the Traditionally Academic Curriculum, 1993-2006



**Figure 5: Vocationalization of the Curriculum
(continued)**

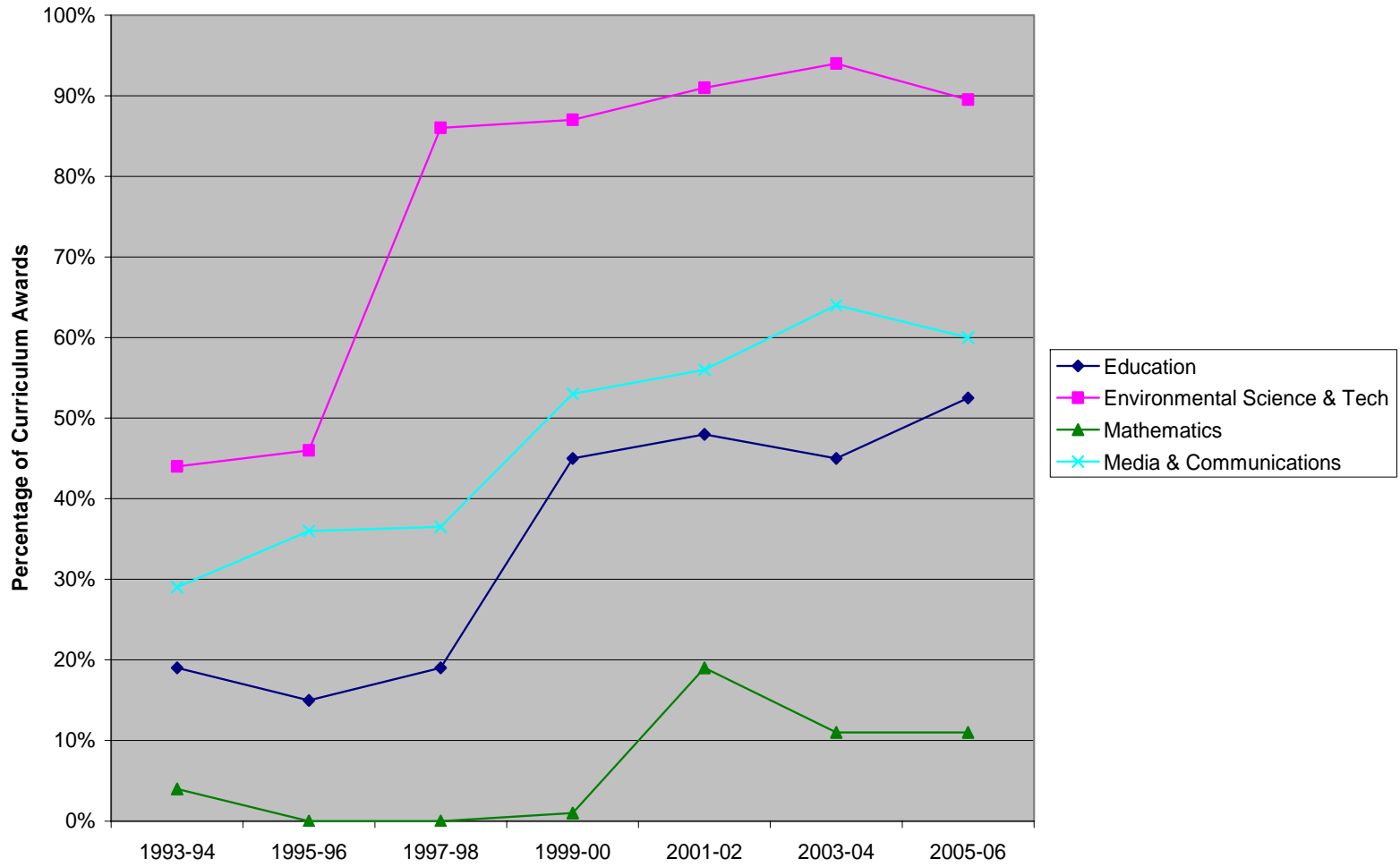
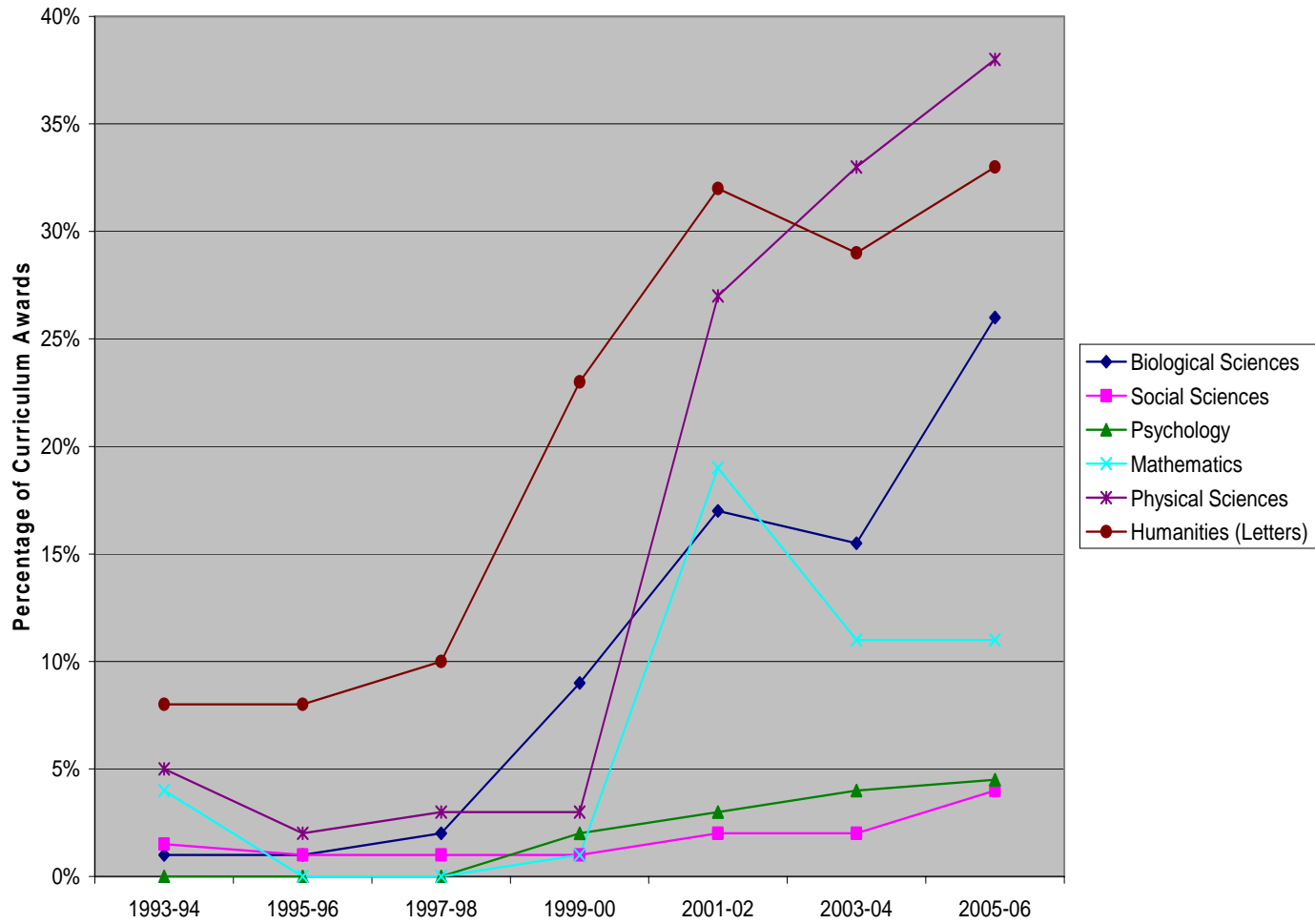


Figure 6: Curriculum Below 10% Vocational in 1993



California Community College Vocational Awards as % of Total Awards

Agriculture/Natural Resources	42%	52%	58%	65%	54%	62%	42%
Architecture/ Related Tech	53%	37%	33.50%	37%	47%	56%	59%
Biological Sciences	1%	1%	2%	9%	17%	15.50%	26%
Business/Management	37%	35%	37%	43%	47%	47%	47%
Commercial Services	81%	84%	83%	83%	89%	90%	86%
Education	19%	15%	19%	45%	48%	45%	53%
Engineering/Industrial Tech	66%	64%	65%	77%	80%	80%	80%
Environmental Science & Tech	44%	46%	86%	87%	91%	94%	90%
Family & Consumer Science	69%	63%	65%	72%	75%	74%	76%
Fine and Applied Arts	29%	21%	25%	41%	47%	43%	40%
Foreign Language	12%	7%	10%	4%	9%	30%	47%
Health	52%	52%	55%	58%	58%	58%	54%
Humanities (Letters)	8%	8%	10%	23%	32%	29%	33%
Information Tech	42%	49%	47%	58%	63%	63%	57%
Interdisciplinary Studies	3%	4%	3%	4%	4%	1%	2%
Law	52%	50%	48%	48%	49%	50%	55%
Library Science	65%	60%	64%	79%	80%	82%	76%
Mathematics	4%	0%	0%	1%	19%	11%	11%
Media & Communications	29%	36%	37%	53%	56%	64%	60%
Physical Sciences	5%	2%	3%	3%	27%	33%	38%
Psychology	0%	0%	0%	2%	3%	4%	5%
Public & Protective Services	49%	75%	72%	77%	78%	73%	67%
Social Sciences	2%	1%	1%	1%	2%	2%	4%
	1993-94	1995-96	1997-98	1999-00	2001-02	2003-04	2005-06

California Community College Curricular Areas

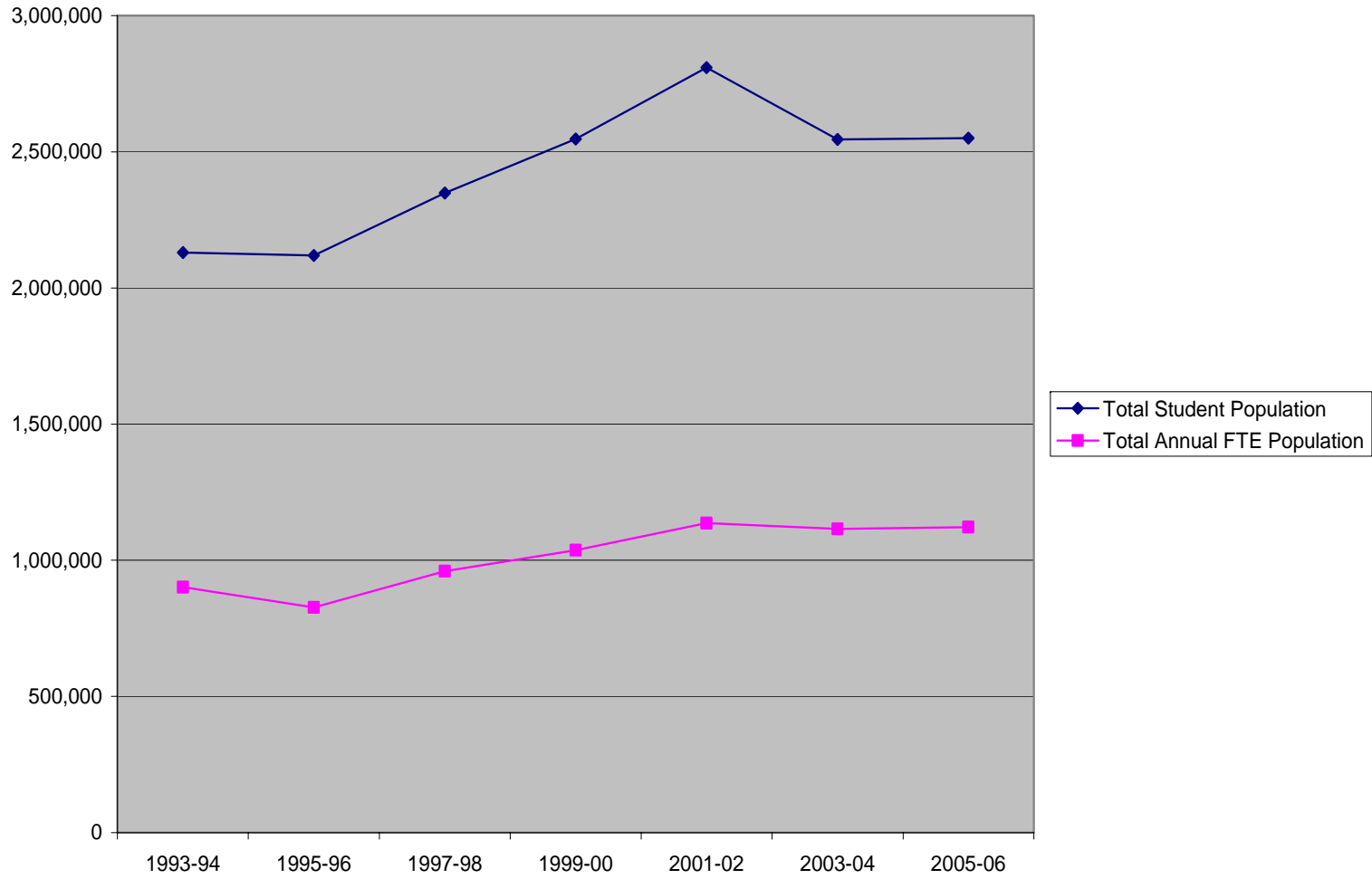
Agriculture/Natural Resources	Humanities (Letters)
Architecture/ Related Tech	Information Tech
Biological Sciences	Interdisciplinary Studies
Business/Management	Law
Commercial Services	Library Science
Education	Mathematics
Engineering/Industrial Tech	Media & Communications
Environmental Science & Tech	Physical Sciences
Family & Consumer Science	Psychology
Fine and Applied Arts	Public & Protective Services
Foreign Language	Social Sciences
Health	

California Community College Curriculum Trends: Ratio of Degree/Certificates, 1993 to 2006

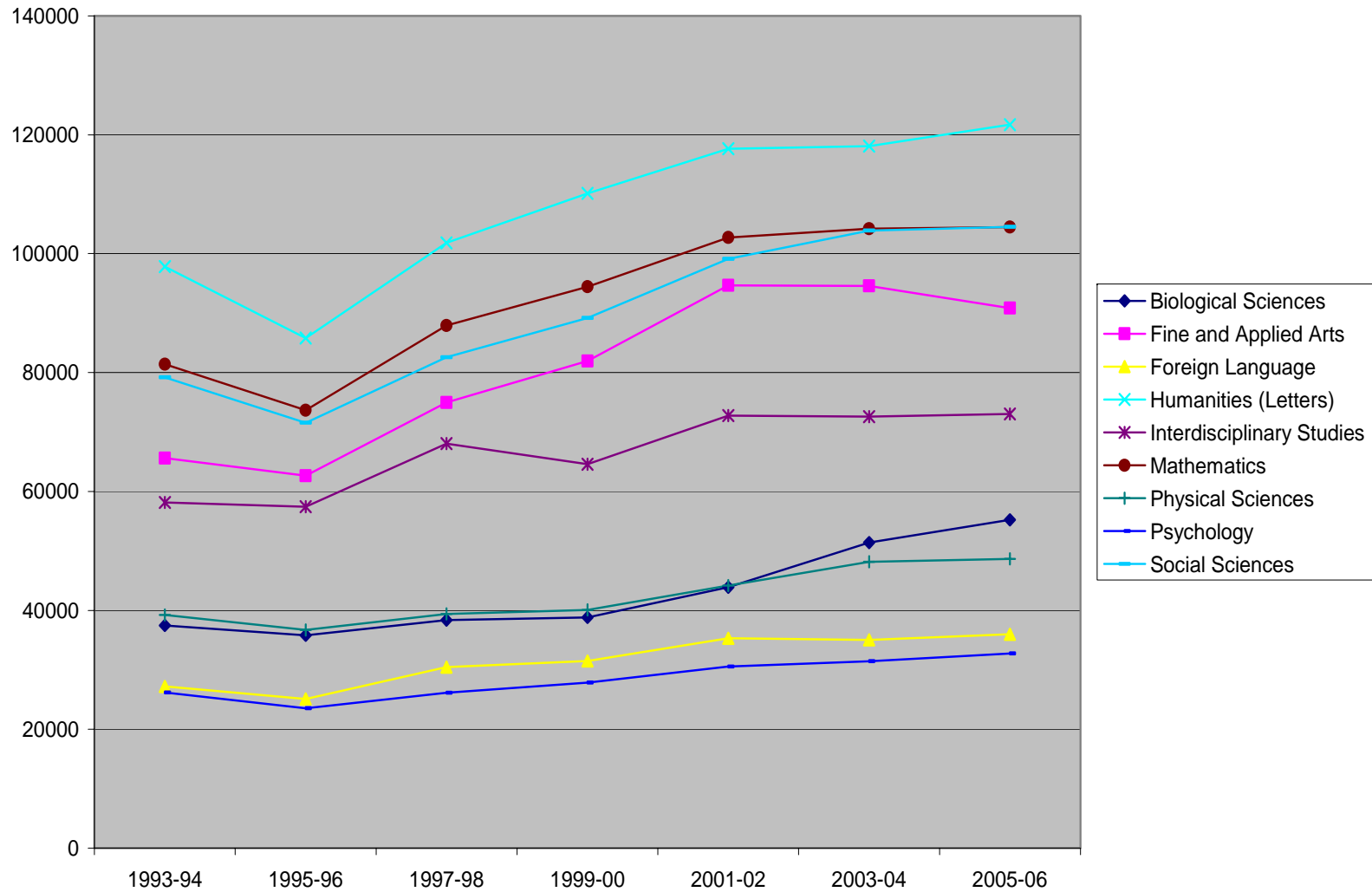
	Voc/Acad	Voc/Acad	Voc/Acad	Voc/Acad	Voc/Acad	Voc/Acad	Voc/Acad
1 Agriculture/Natural Resources	42 / 58	52 / 48	58 / 42	65 / 35	54 / 46	62 / 38	42 / 58
2 Architecture/ Related Tech	53 / 47	37 / 63	33.5 / 66.5	37 / 63	47 / 53	56 / 44	59 / 41
3 Biological Sciences	1. / 99	1. / 99	2. / 98	9. / 91	17 / 83	15.5 / 84.5	26 / 74
4 Business/Management	37 / 63	35 / 65	37 / 63	43 / 57	47 / 53	47 / 53	47 / 53
5 Commercial Services	81 / 19	84 / 16	83 / 17	83 / 17	88.5 / 11.5	90 / 10	86 / 14
6 Education	19 / 81	15 / 85	19 / 81	45 / 55	48 / 52	45 / 55	52.5 / 47.5
7 Engineering/Industrial Tech	66 / 34	64 / 36	65 / 35	77 / 23	79.5 / 20.5	80 / 20	80 / 20
8 Environmental Science & Tech	44 / 56	46 / 54	86 / 14	87 / 13	91 / 9	94 / 6	89.4 / 10.6
9 Family & Consumer Science	69 / 31	63 / 37	65 / 35	72 / 28	75 / 25	73.5 / 26.5	76 / 24
10 Fine and Applied Arts	29 / 71	21 / 79	25 / 75	41 / 59	47 / 53	43 / 57	40 / 60
11 Foreign Language	12. / 88	7. / 93	10. / 90	4. / 96	9. / 91	30 / 70	47 / 53
12 Health	52.5 / 47.5	52 / 48	55 / 45	58 / 42	58 / 42	58 / 42	54 / 46
13 Humanities (Letters)	8. / 92	8. / 92	10. / 90	23 / 77	32 / 68	29 / 71	33 / 67
14 Information Tech	42 / 58	49 / 51	47 / 53	58 / 42	63 / 37	63 / 37	57 / 43
15 Interdisciplinary Studies	3. / 97	3.5 / 96.5	3. / 97	4. / 96	3.5 / 96.5	1. / 99	1.5 / 98.5
16 Law	52 / 48	50 / 50	48 / 52	47.5 / 52.5	49 / 51	49.8 / 50.2	55 / 45
17 Library Science	65 / 35	60 / 40	64 / 33	79 / 21	80 / 20	82 / 18	76 / 24
18 Mathematics	4. / 96	0 / 100	0.2 / 99.8	1. / 99	19 / 81	11. / 89	11. / 89
19 Media & Communications	29 / 71	36 / 64	36.5 / 63.5	53 / 47	56 / 44	64 / 36	60 / 40
20 Military Studies	0 / 100	none	none	none	none	none	none
21 Physical Sciences	5. / 95	2. / 98	3. / 97	3. / 97	27 / 73	33 / 67	38 / 62
22 Psychology	0.3 / 99.7	0 / 100	0.4 / 99.6	2. / 98	3. / 97	4. / 96	4.5 / 95.5
23 Public & Protective Services	49 / 51	74.5 / 25.5	71.5 / 28.5	76.5 / 23.5	78 / 22	72.5 / 27.5	67 / 33
24 Social Sciences	1.5 / 98.5	1. / 99	1. / 99	1. / 99	2. / 98	2. / 98	4. / 96
	1993-94	1995-96	1997-98	1999-00	2001-02	2003-04	2005-06

California Community College
“Credit” Status Full-Time Equivalent (FTE) Population
1993 - 2006

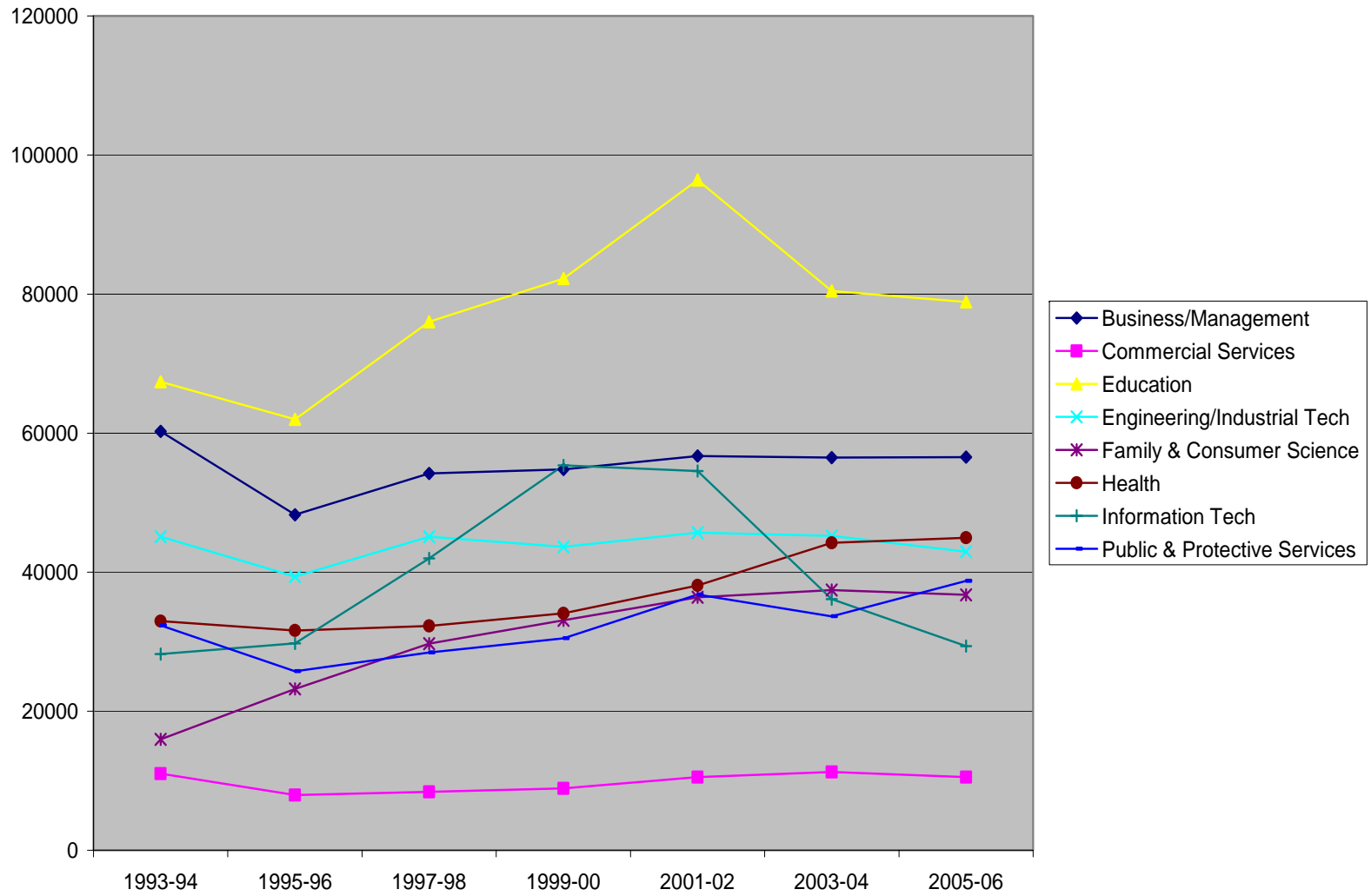
Figure 1: Total and FTE Student Population, 1995-2006



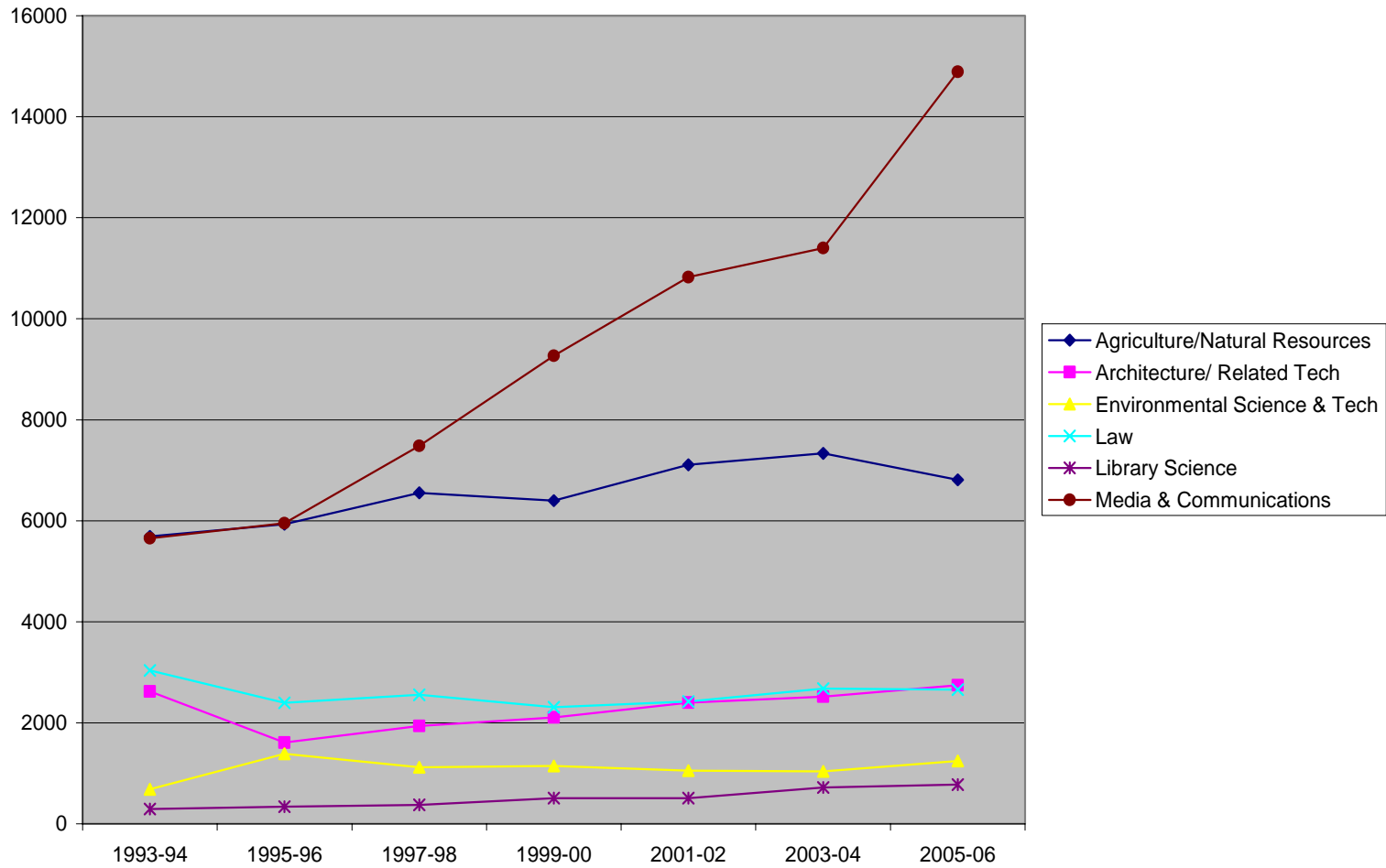
FTE Credit Population (Academic Curriculum), 1993 - 2006



FTE Credit Pop (Vocational), 1993 - 2006



FTE Credit Population (Lowest Enrollments in 1993-94), 1993 - 2006

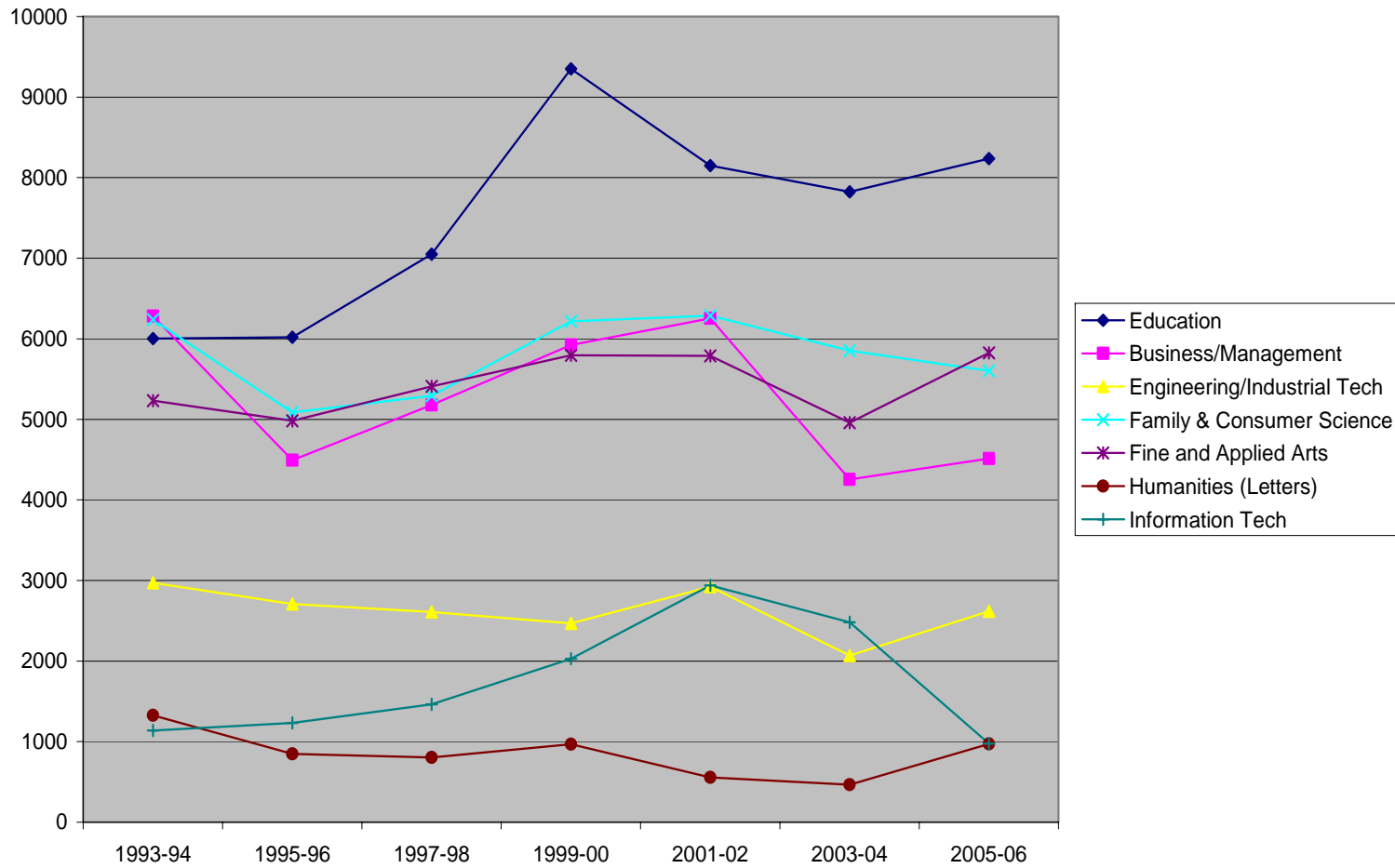


California Community College FTE Credit Students, 1993-2006

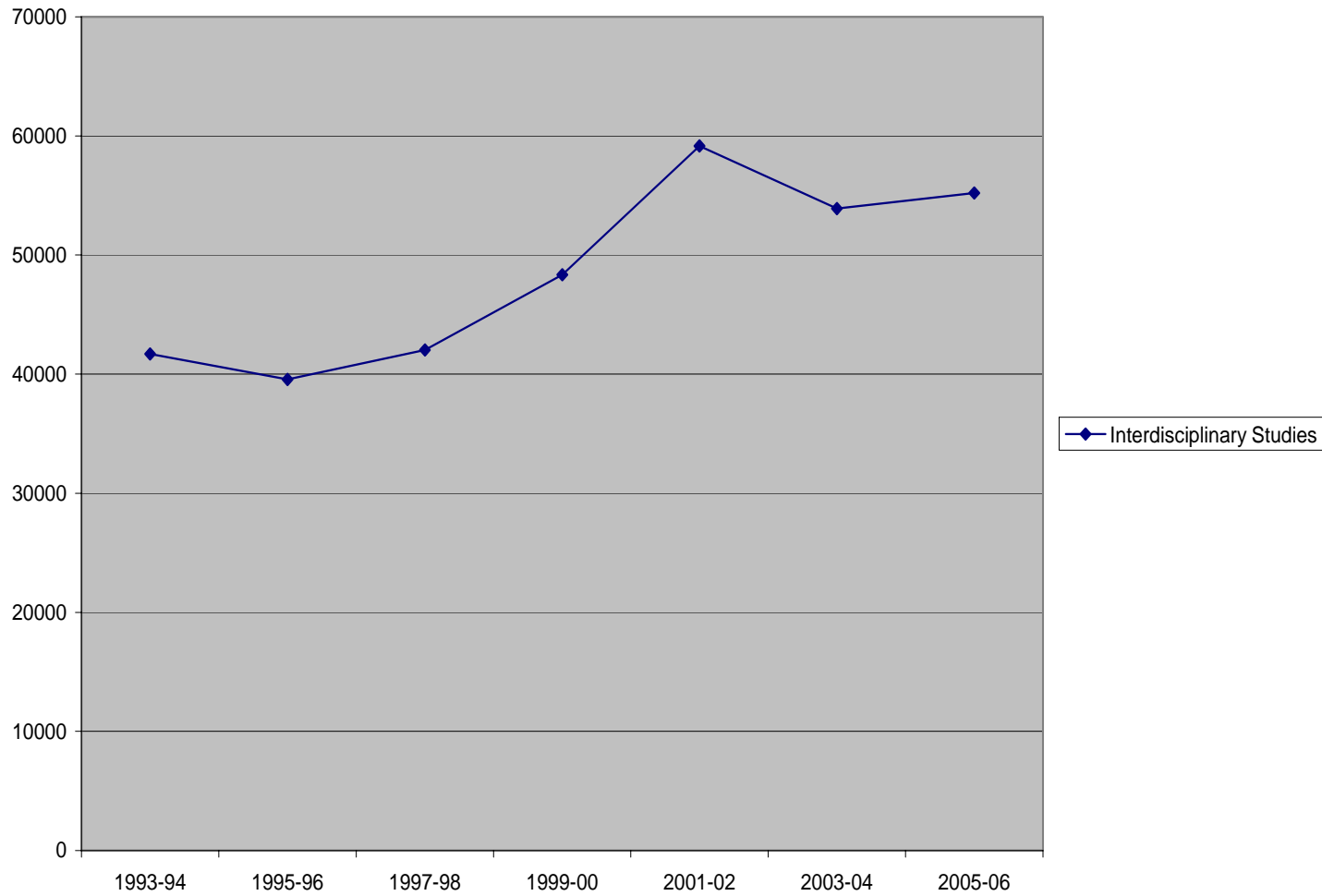
Agriculture/Natural Resources	5690.259	5933.04	6552.72	6401.211	7110.688	7334.566	6811.255
Architecture/ Related Tech	2623.781	1608.387	1937.263	2104.859	2399.381	2517.185	2742.52
Biological Sciences	37455.66	35812.71	38380.53	38799.14	43874.27	51402.59	55210.66
Business/Management	60263.86	48275.25	54200.42	54795.19	56714.1	56471.73	56538.82
Commercial Services	11034.81	7949.143	8417.954	8889.482	10536.16	11239.75	10513.59
Education	67374.48	61972.99	76018.09	82206.23	96409.37	80467.69	78871.68
Engineering/Industrial Tech	45104.42	39365.12	45116.25	43625.33	45667.98	45217.43	42950.82
Environmental Science & Tech	683.8419	1387.724	1121.987	1143.615	1053.486	1037.802	1244.958
Family & Consumer Science	15940.92	23201.07	29735.73	33079.4	36407.2	37412.47	36739.98
Fine and Applied Arts	65630.36	62632.38	74983.16	81937.01	94662.22	94588.07	90851.89
Foreign Language	27210.2	25114.42	30444.23	31497	35289.77	35037.91	35977.6
Health	32961.34	31596.48	32276.19	34068.04	38086.75	44224.94	44943
Humanities (Letters)	97800.93	85830.01	101808.4	110116.2	117656.8	118085.2	121697.7
Information Tech	28220.76	29762.81	41982.76	55373.1	54530.18	36115.1	29374.61
Interdisciplinary Studies	58135.95	57418.12	68051.62	64585.47	72755.43	72594	73047.12
Law	3037.368	2396.082	2556.27	2308.606	2419.89	2680.006	2657.11
Library Science	291.9581	341.0457	374.4248	510.1467	510.141	717.5162	774.5124
Mathematics	81380.65	73664.43	87940.58	94450.66	102695.8	104206	104481
Media & Communications	5653.726	5951.097	7482.819	9268.916	10826.54	11400.23	14890.14
Physical Sciences	39237.86	36676.88	39379.8	40055.69	44183.65	48154.52	48675.11
Psychology	26157.23	23525.18	26129.34	27819.75	30533.53	31443.58	32726.46
Public & Protective Services	32351.5	25755.08	28458.7	30487.18	36787.69	33659.32	38729.3
Social Sciences	79218.66	71541.1	82561.61	89161.68	99114.99	103906	104526.6
	1993-94	1995-96	1997-98	1999-00	2001-02	2003-04	2005-06

California Community College
“Non-Credit” Status Full-Time Equivalent (FTE) Population
1993 - 2006

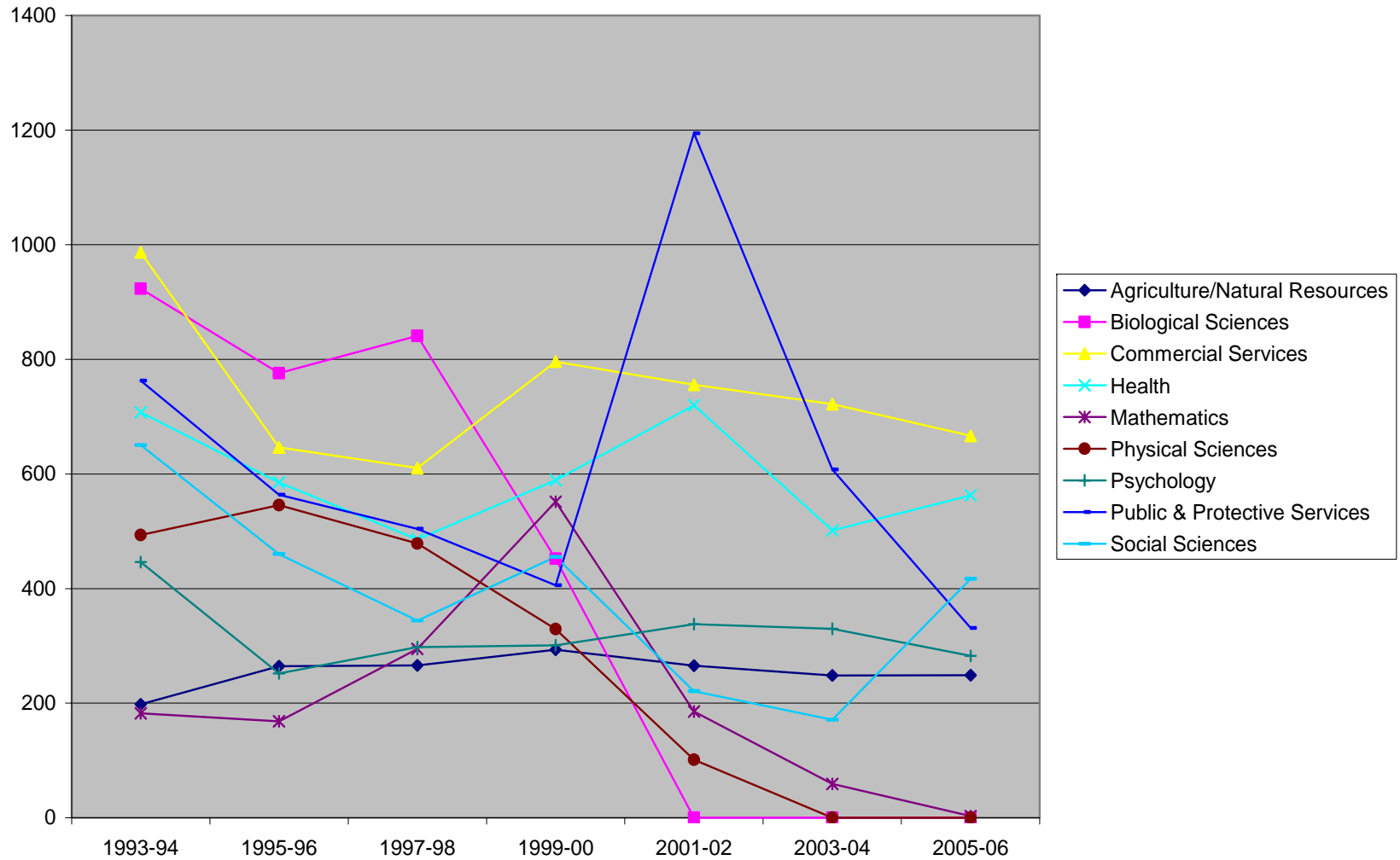
FTE Non-Credit Population of Largest Enrollments (excluding Interdisciplinary Studies), 1993-2006



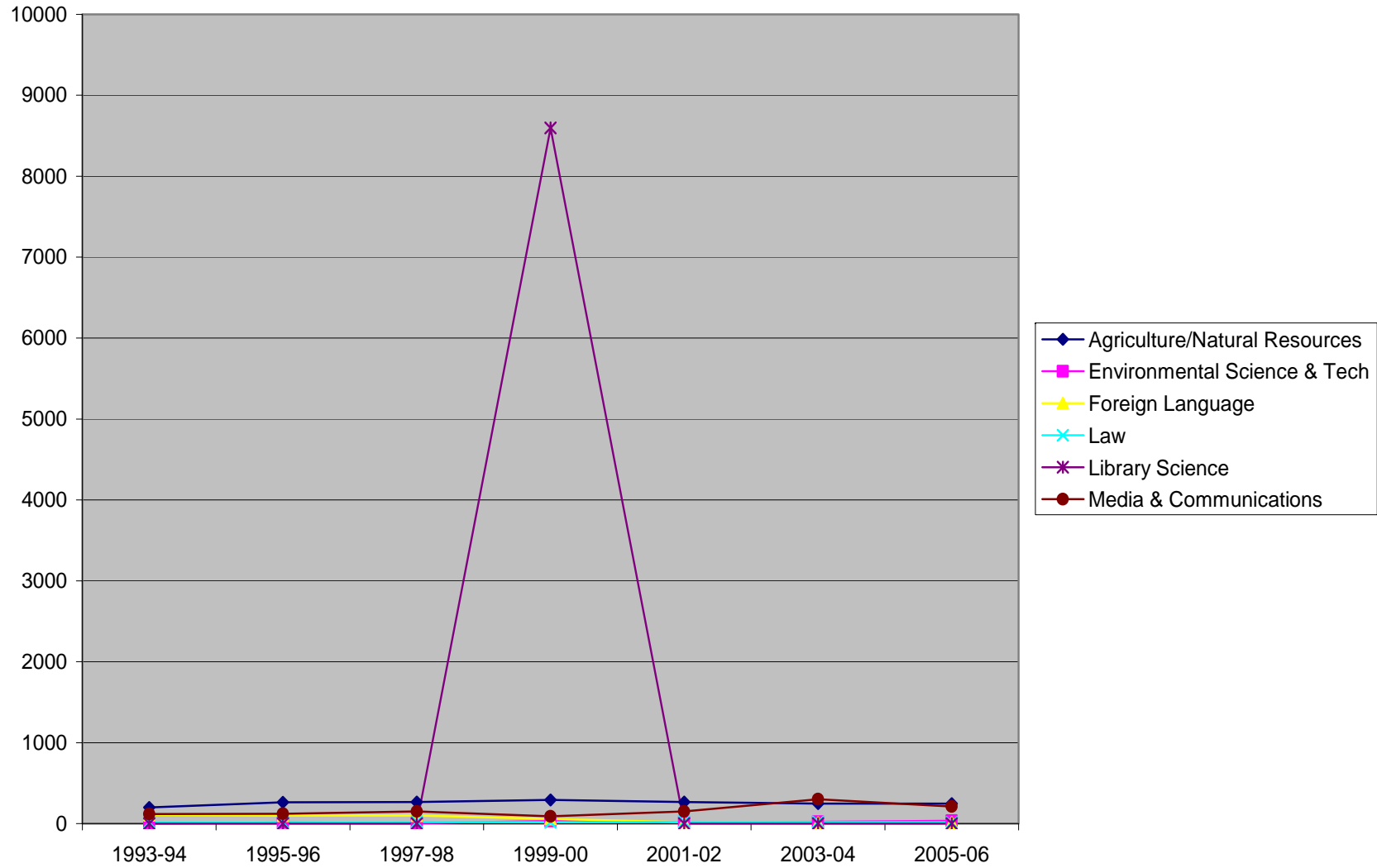
Non-Credit FTE Population in Interdisciplinary Studies (Largest Enrollments), 1993 - 2006



Non-Credit FTE Population (Mid-level Enrollments), 1993-2006



Non-Credit FTE Populations (Lowest Enrollments), 1993 - 2006

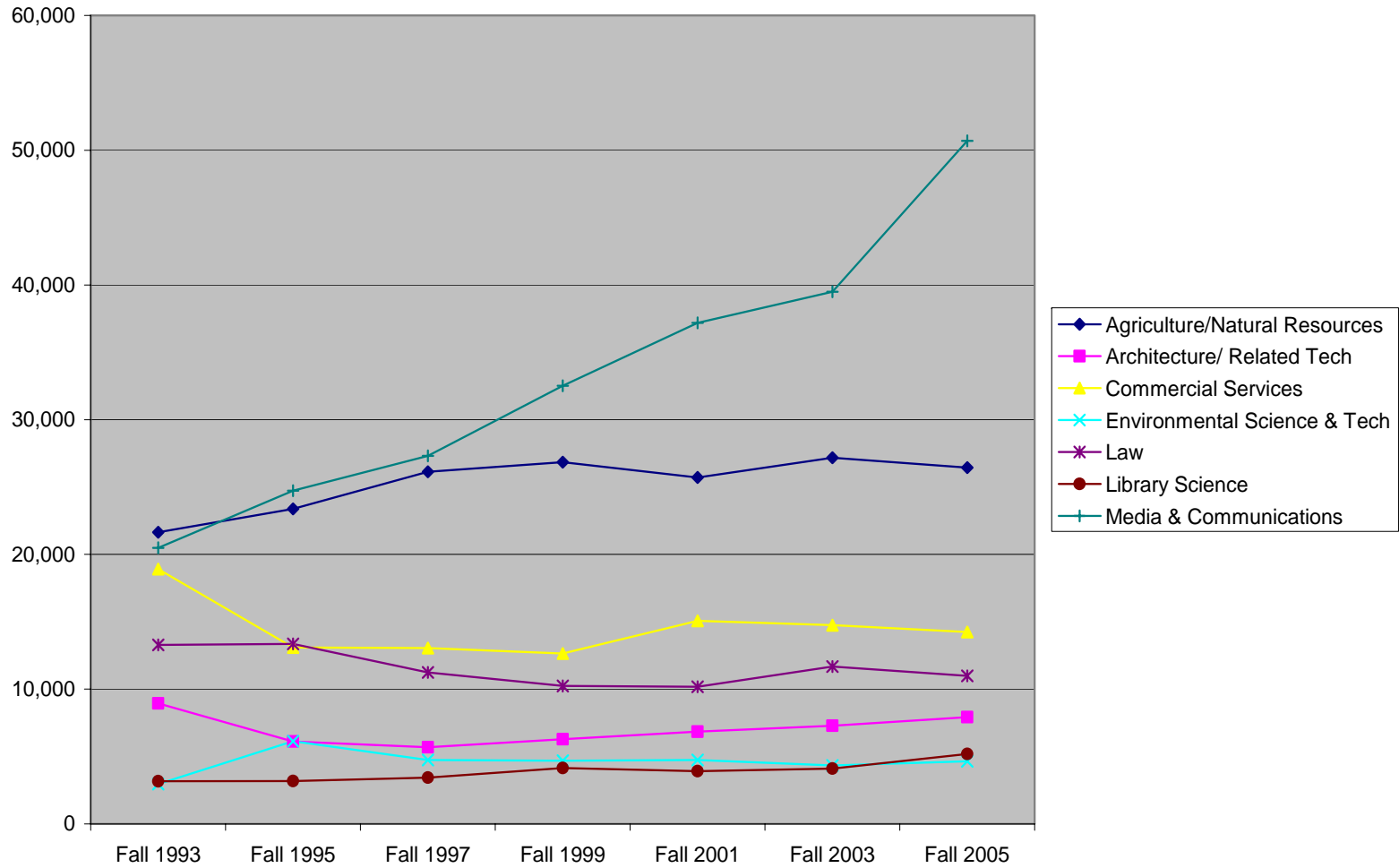


California Community College FTE Non-Credit Students, 1993-2006

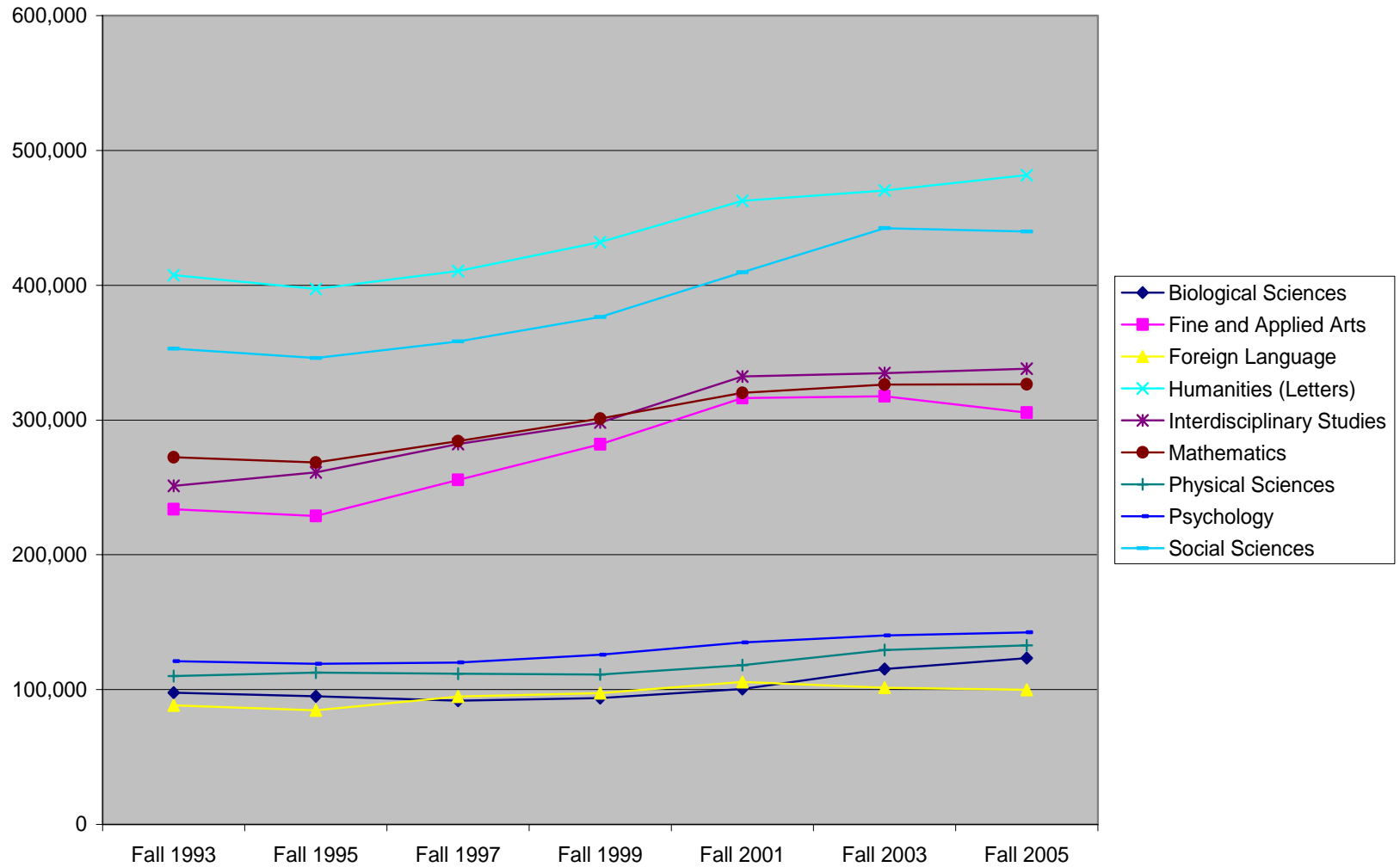
Agriculture/Natural Resources	197.8419	264.6305	265.7924	293.0876	265.1543	248.2781	248.6362
Architecture/ Related Tech	48.40952	38.38286	37.1581	20.16	1.59238	0.497142	0.975238
Biological Sciences	923.2229	775.9562	840.7962	451.9981	0.194285	0	0
Business/Management	6279.28	4493.669	5178.676	5921.596	6253.718	4256.112	4513.095
Commercial Services	986.6762	646.3581	610.1314	796.101	755.5238	721.6857	666.381
Education	6002.533	6019.131	7048.933	9350.349	8149.404	7825.339	8234.05
Engineering/Industrial Tech	2968.438	2710.032	2606.928	2466.768	2921.655	2070.377	2618.404
Environmental Science & Tech	0	12.26667	5.420952	33.06286	20.21333	22.87429	34.83619
Family & Consumer Science	6237.305	5086.526	5293.042	6215.989	6287.979	5851.171	5602.194
Fine and Applied Arts	5233.682	4980.469	5409.015	5795.05	5787.394	4959.238	5825.587
Foreign Language	105.5714	98.56381	100.8343	57.73905	20.04952	11.14857	14.42095
Health	707.4743	584.9143	485.8857	589.1771	719.8705	501.6133	562.8133
Humanities (Letters)	1324.636	847.1638	803.8076	969.1867	554.3981	463.9257	969.9238
Information Tech	1139.596	1230.465	1461.484	2029.688	2939.32	2479.141	973.019
Interdisciplinary Studies	41685.96	39551.55	42034.44	48355.26	59171.8	53899.56	55198.32
Law	14.9981	13.96762	21.12952	17.59048	21.03429	19.10857	13.18857
Library Science	0	0.331428	0	8595.234	0.441904	0	0
Mathematics	182.3448	168.0476	294.6724	551.2248	185.0743	58.72571	2.508571
Media & Communications	118.6076	120.9562	151.1181	91.27048	152.1067	302.6514	213.6019
Physical Sciences	493.4724	545.6038	478.6952	329.2933	101.139	0	0
Psychology	446.2152	251.6533	297.9276	300.659	337.8952	329.579	282.4057
Public & Protective Services	762.9143	563.5448	504.1314	405.6933	1194.604	607.7181	330.88
Social Sciences	650.5105	460.1676	344.1048	454.92	220.901	170.7181	416.7543
	1993-94	1995-96	1997-98	1999-00	2001-02	2003-04	2005-06

California Community College
Total Student Population (All Enrollments)
1993 – 2006

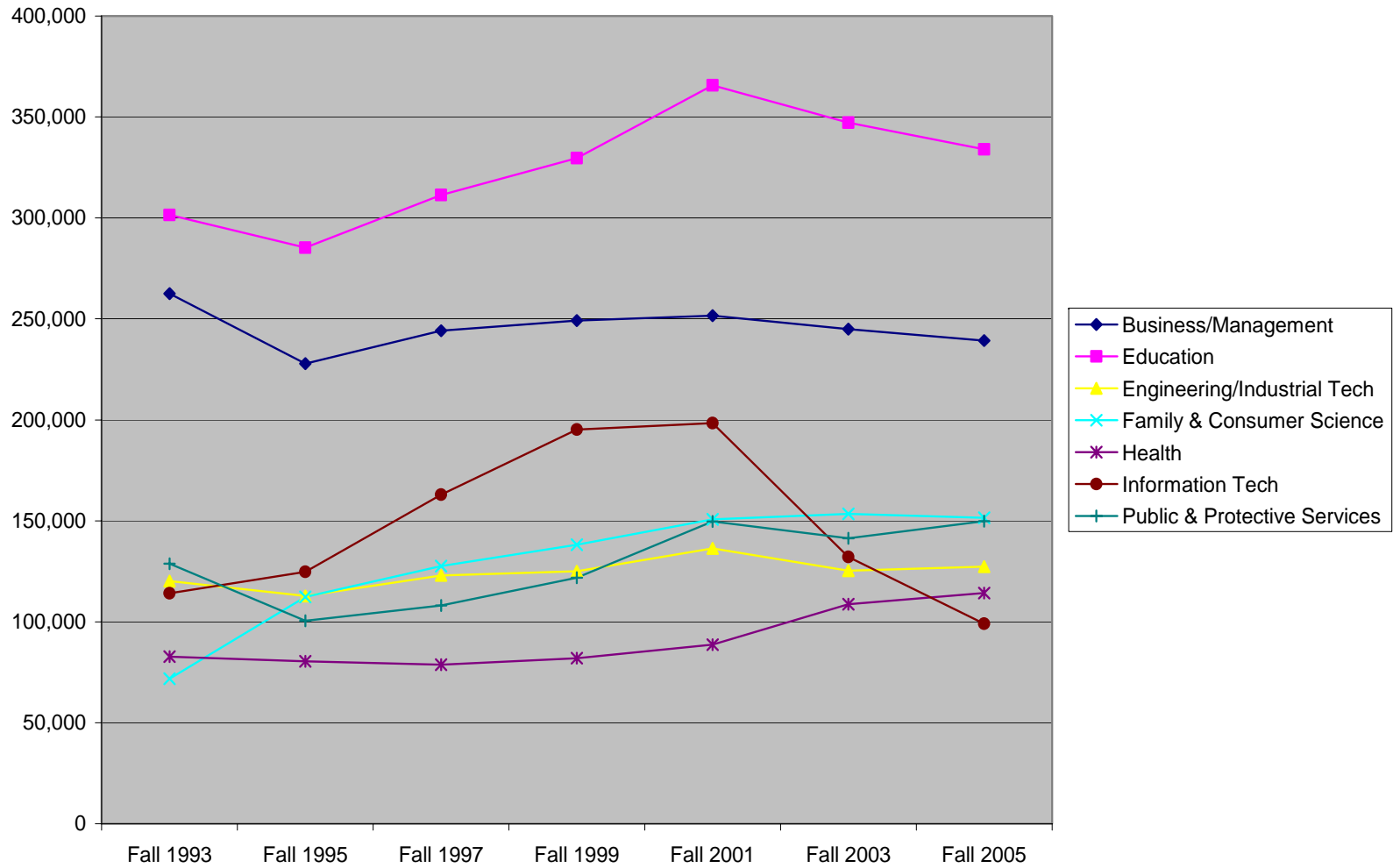
Total Student Population (Lowest Enrollments in 1993), Fall 1993 - Fall 2005



Total Student Population (Academic Enrollments), Fall 1993 - Fall 2005



Total Student Population (Vocational Enrollments), Fall 1993 - Fall 2005



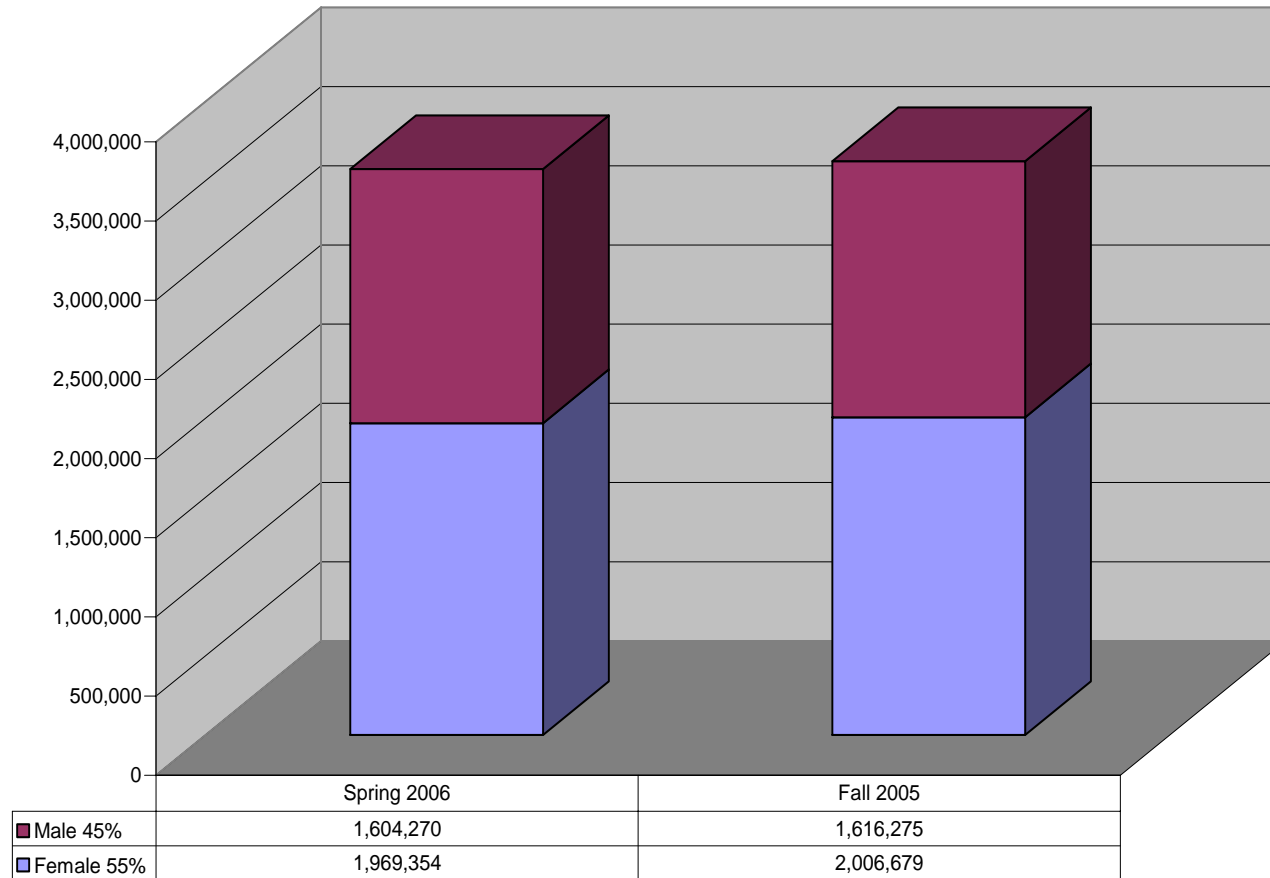
California Community College Total Population of Students, 1993 - 2005

Agriculture/Natural Resources	21,646	23,389	26,130	26,857	25,718	27,176	26,437
Architecture/ Related Tech	8,949	6,102	5,689	6,274	6,833	7,285	7,913
Biological Sciences	97,744	94,947	91,786	93,591	100,447	115,232	123,311
Business/Management	262,542	227,873	244,200	249,107	251,626	244,861	239,282
Commercial Services	18,904	13,086	13,041	12,650	15,074	14,741	14,241
Education	301,441	285,210	311,391	329,577	365,714	347,158	333,999
Engineering/Industrial Tech	120,106	112,775	123,009	124,985	136,367	125,261	127,379
Environmental Science & Tech	2,954	6,121	4,747	4,688	4,734	4,339	4,651
Family & Consumer Science	71,875	112,241	127,610	138,067	150,741	153,463	151,490
Fine and Applied Arts	233,747	228,878	255,538	281,998	316,299	317,572	305,528
Foreign Language	88,329	84,524	94,908	97,255	105,641	101,429	99,852
Health	82,743	80,408	78,803	82,032	88,602	108,710	114,267
Humanities (Letters)	407,376	397,205	410,555	431,974	462,578	470,307	481,591
Information Tech	114,064	124,781	162,934	195,208	198,350	132,136	99,012
Interdisciplinary Studies	251,122	261,248	282,177	298,104	332,348	334,701	338,153
Law	13,276	13,361	11,244	10,242	10,178	11,672	10,984
Library Science	3,166	3,176	3,423	4,137	3,907	4,102	5,193
Mathematics	272,336	268,477	284,318	301,103	320,081	326,253	326,495
Media & Communications	20,488	24,720	27,313	32,515	37,188	39,492	50,683
Physical Sciences	110,149	112,531	111,767	111,260	118,244	129,302	132,759
Psychology	121,064	119,079	120,052	125,781	134,873	140,123	142,406
Public & Protective Services	128,730	100,480	108,092	121,800	149,696	141,375	149,852
Social Sciences	352,897	345,950	358,339	376,483	409,533	442,339	439,837

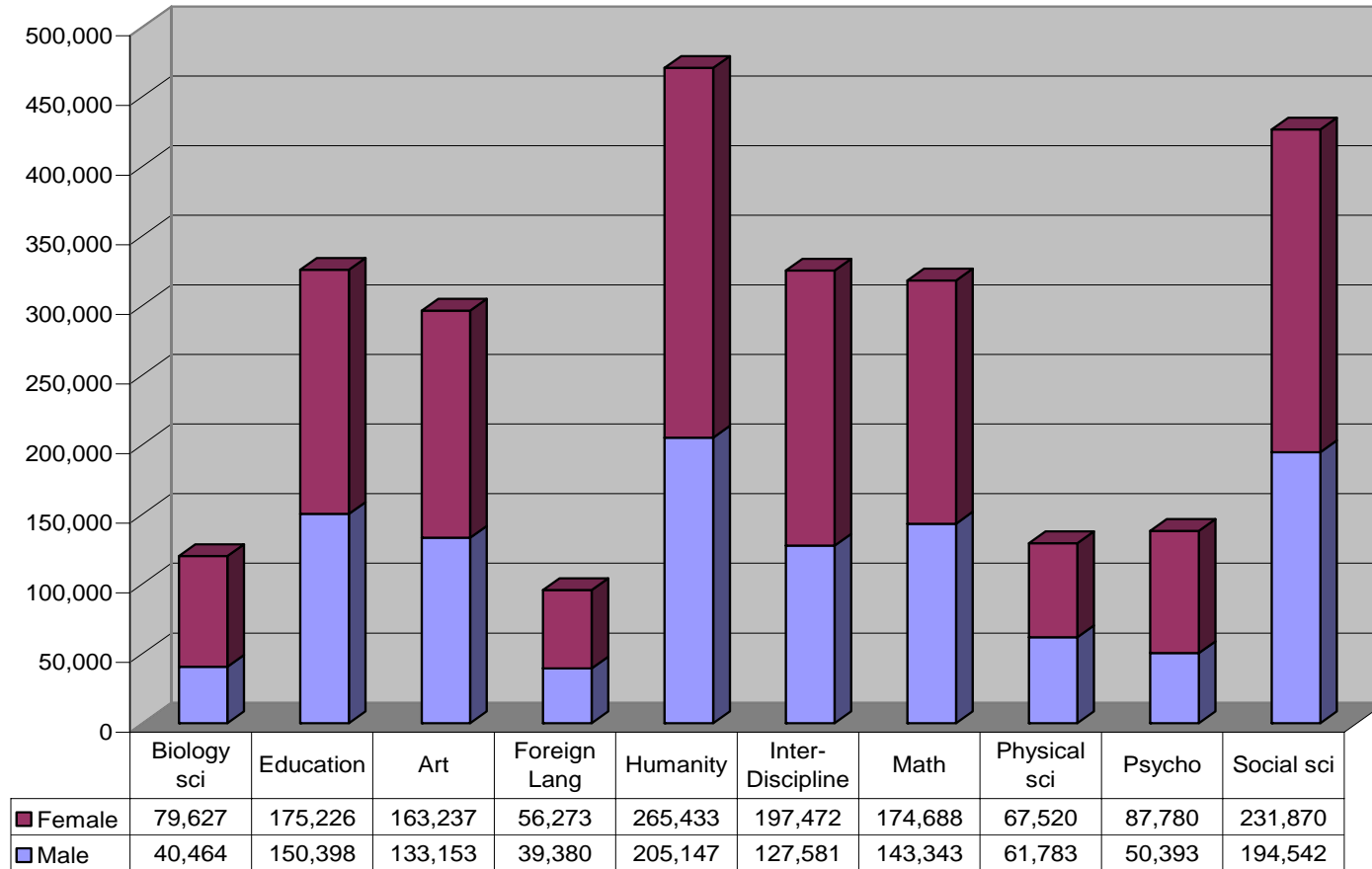
Fall 1993 Fall 1995 Fall 1997 Fall 1999 Fall 2001 Fall 2003 Fall 2005

California Community College
Student Populations by
Curriculum & Gender,
Fall 2005

CA Community College Population by Gender

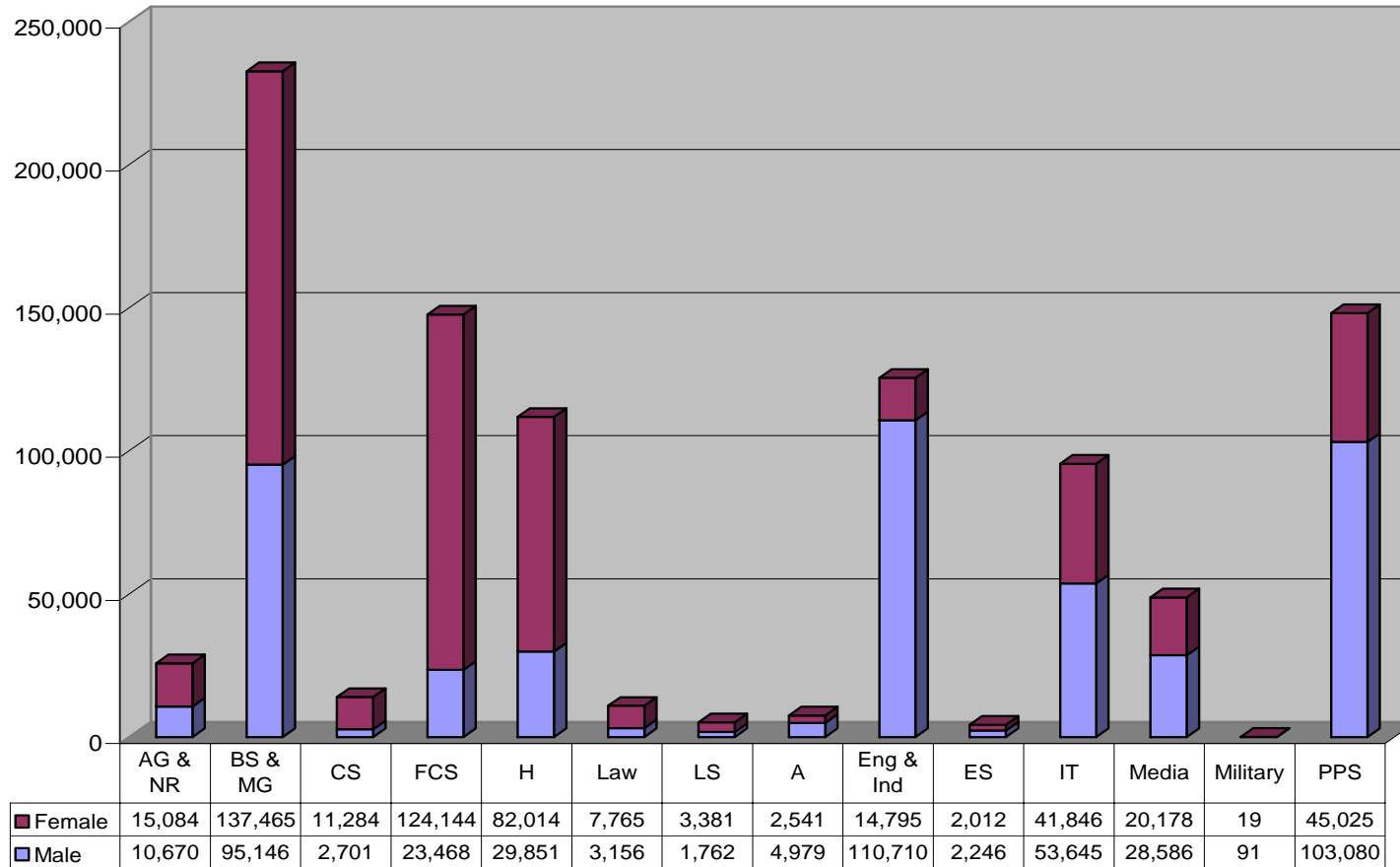


CA Community College Academic Curriculum, Fall 2005



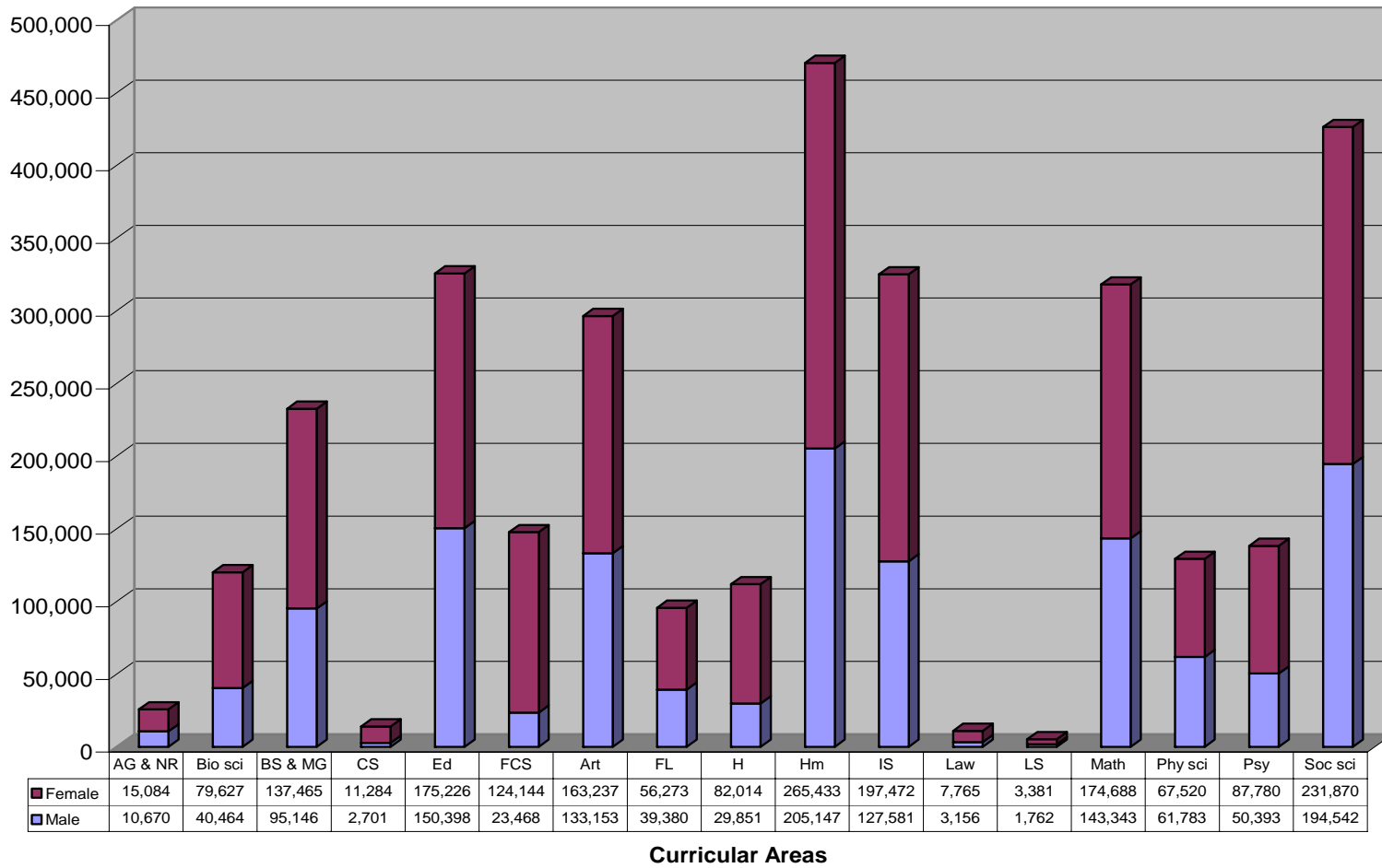
Curricular Areas

CA Community College Vocational Curriculum, Fall 2005

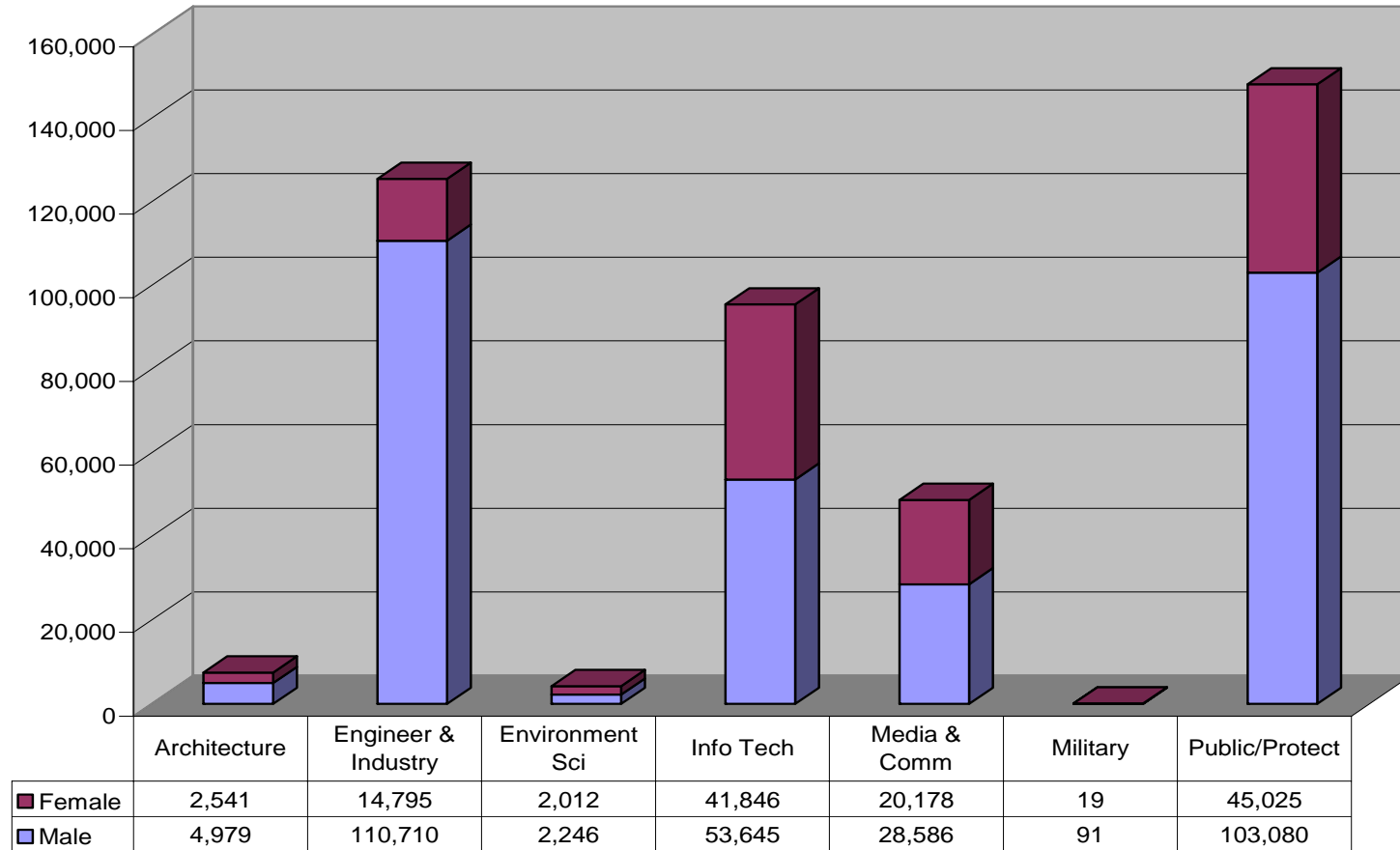


Curricular Areas

Female Majority: Enrollments in CA Curricular Areas, Fall 2005



Male Majority: Enrollments in CA Curricular Areas, Fall 2005

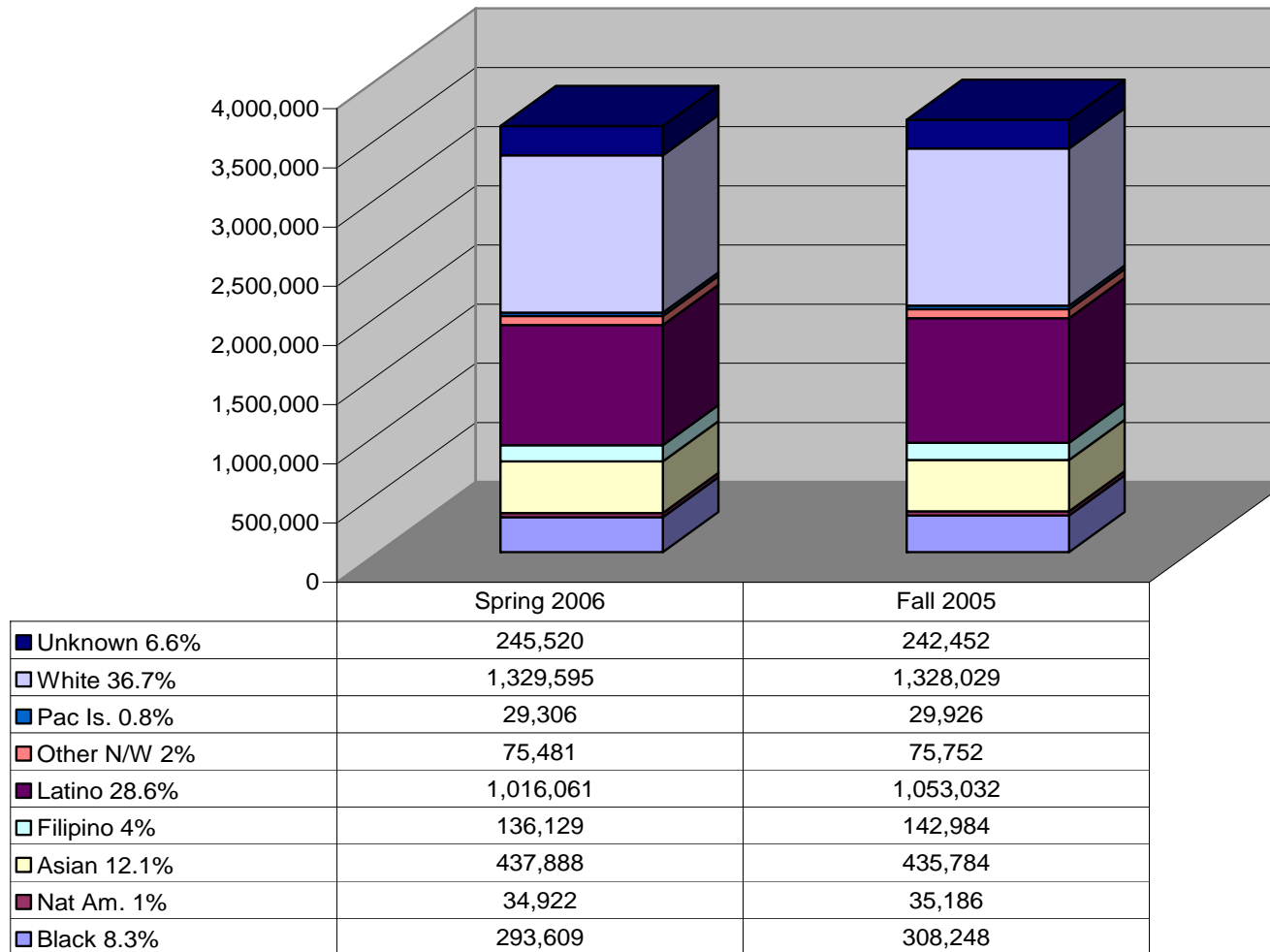


Curricular Areas

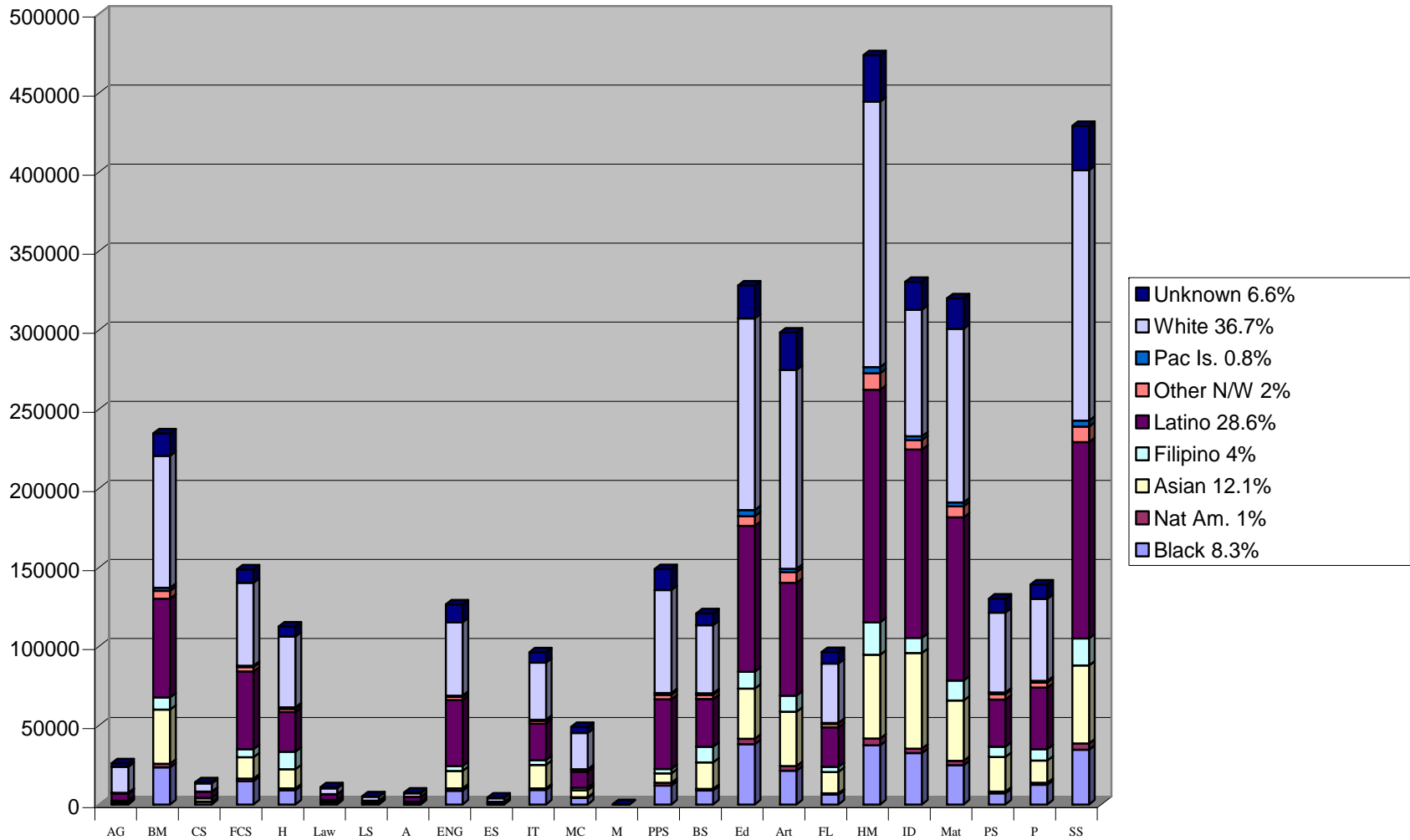
California Community College
Student Populations by
Curriculum & Race/Ethnicity,
Fall 2005

“**Racial Pentad**” is taken from David A. Hollinger’s *Postethnic America: Beyond Multiculturalism* (2000) discussion of the five official categories of the “ethno-racial pentagon” used by many social scientists and government officials for much of the 20th century. The five official categories were Euro-American (White), African-American (Black), Hispanic, Asian American, and Indigenous Peoples/Native Americans (p. 23).

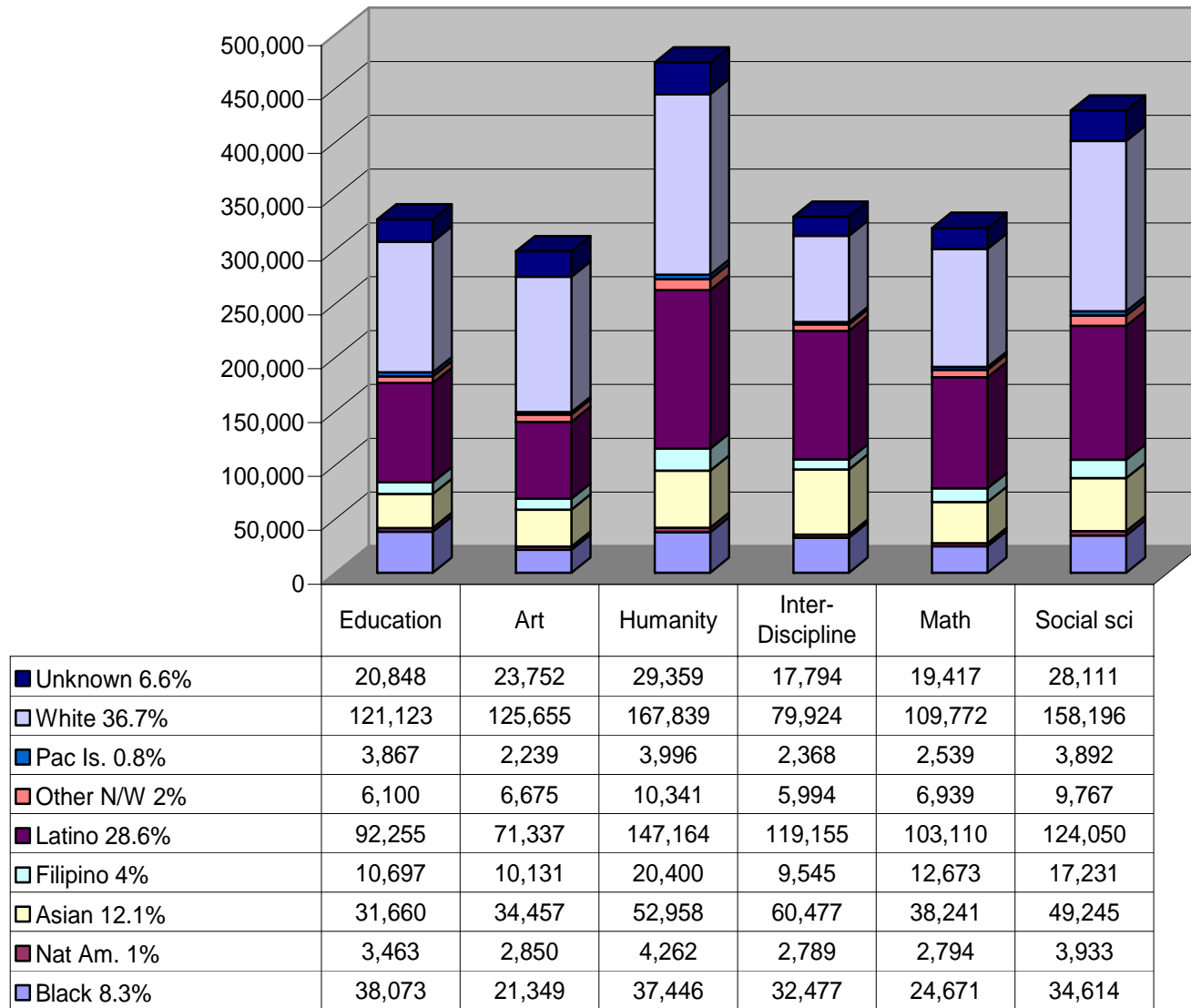
CA Community College Population by Race/Ethnicity



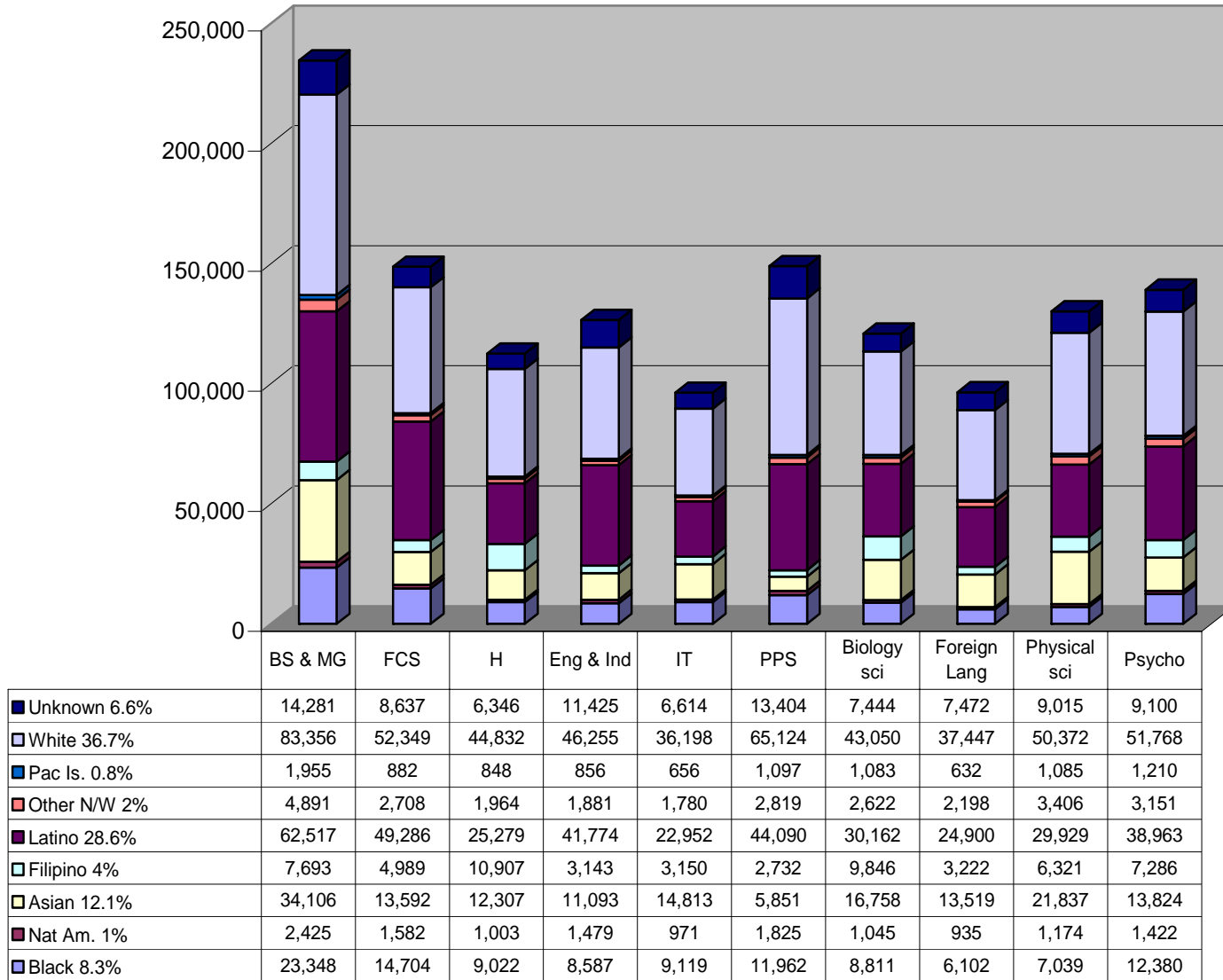
CA Community College Curriculum by Race/Ethnicity



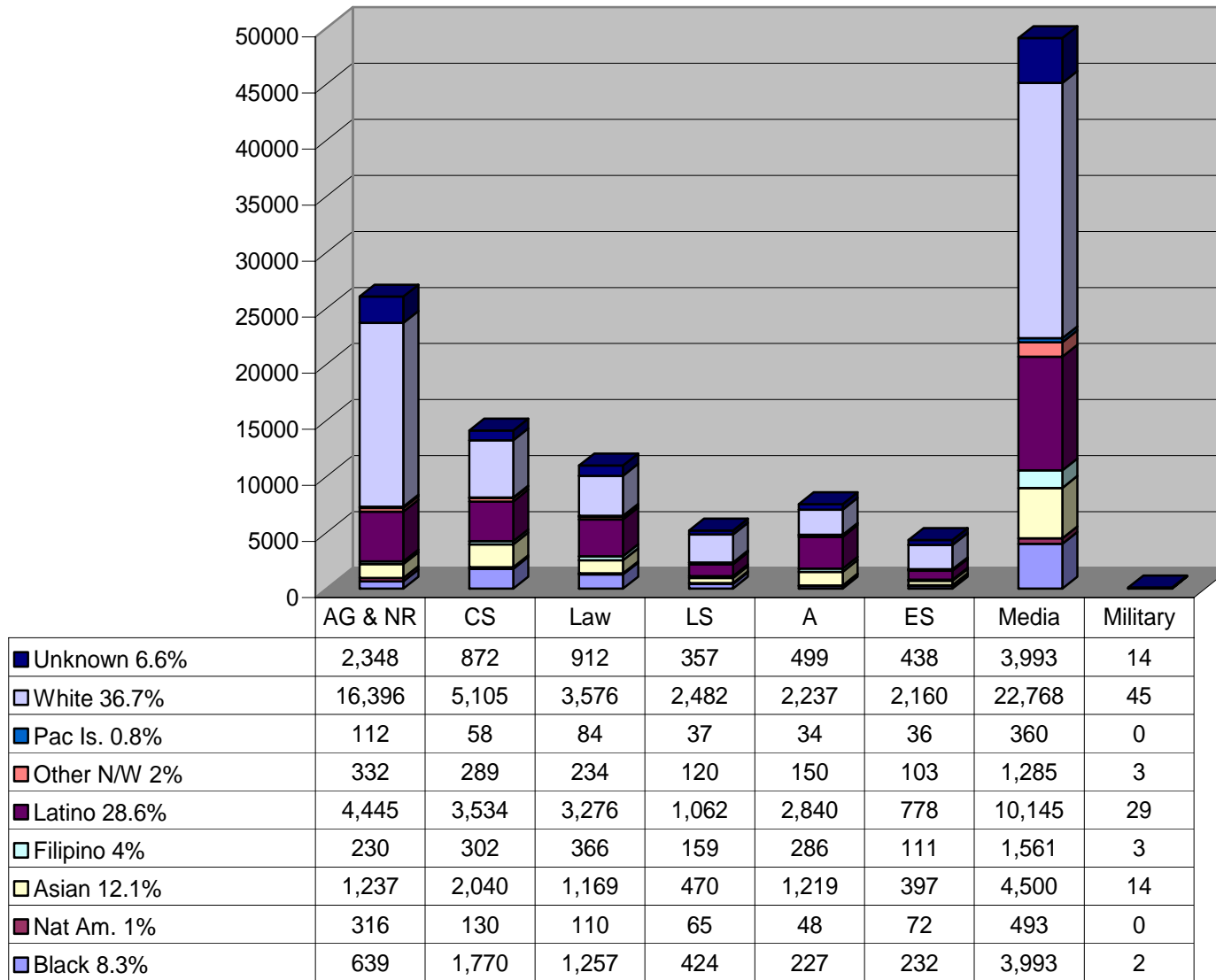
Highest Enrollment by Race/Ethnicity



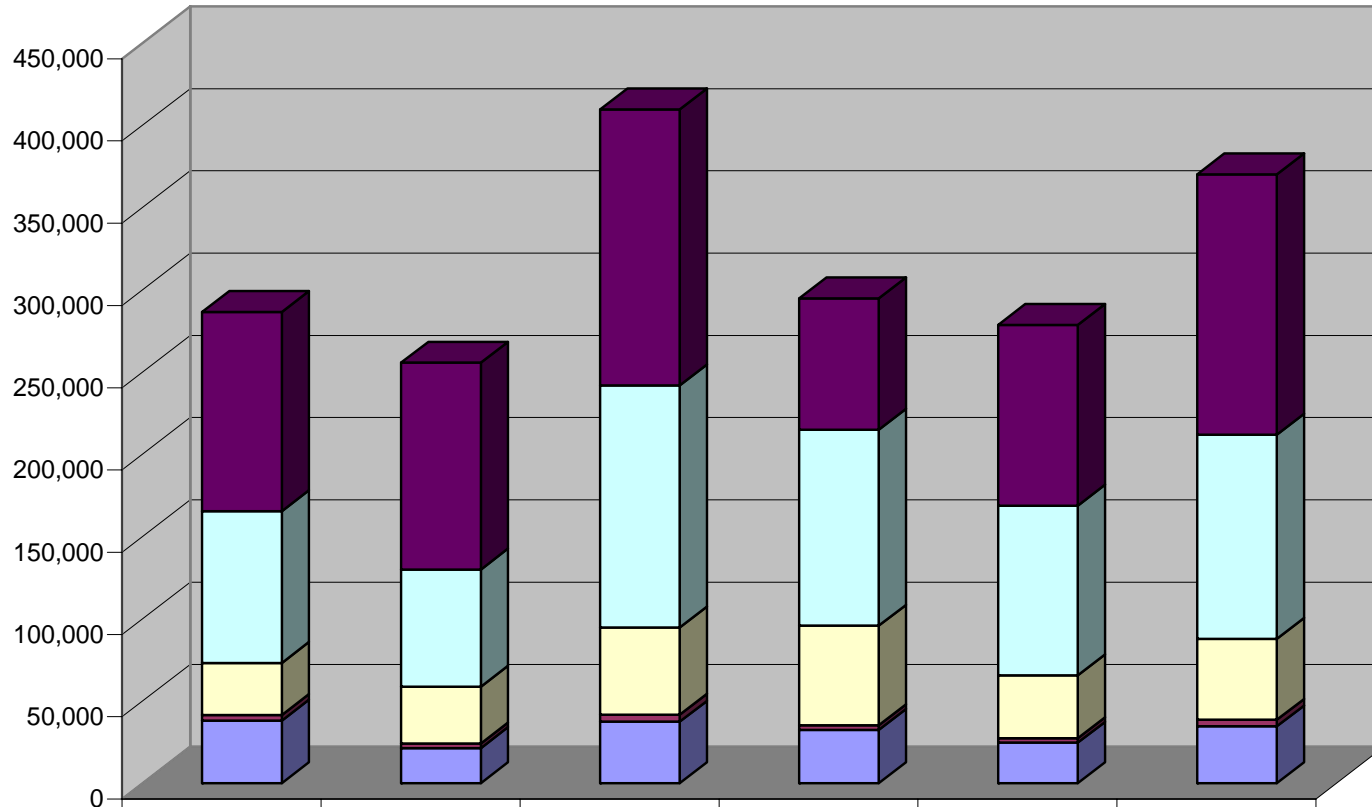
Mid-Level Enrollments by Race/Ethnicity



Low Enrollments by Race/Ethnicity

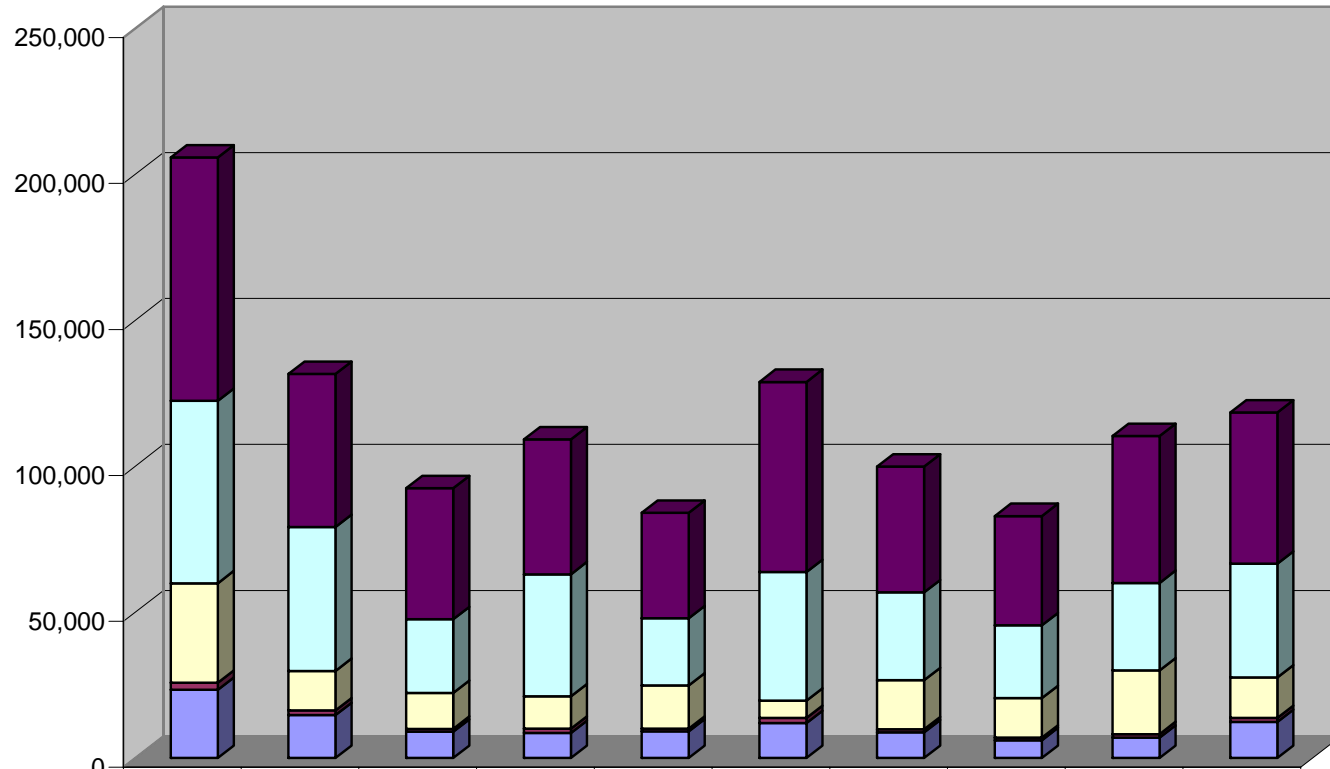


High Enrollments: U.S. Racial Pentad



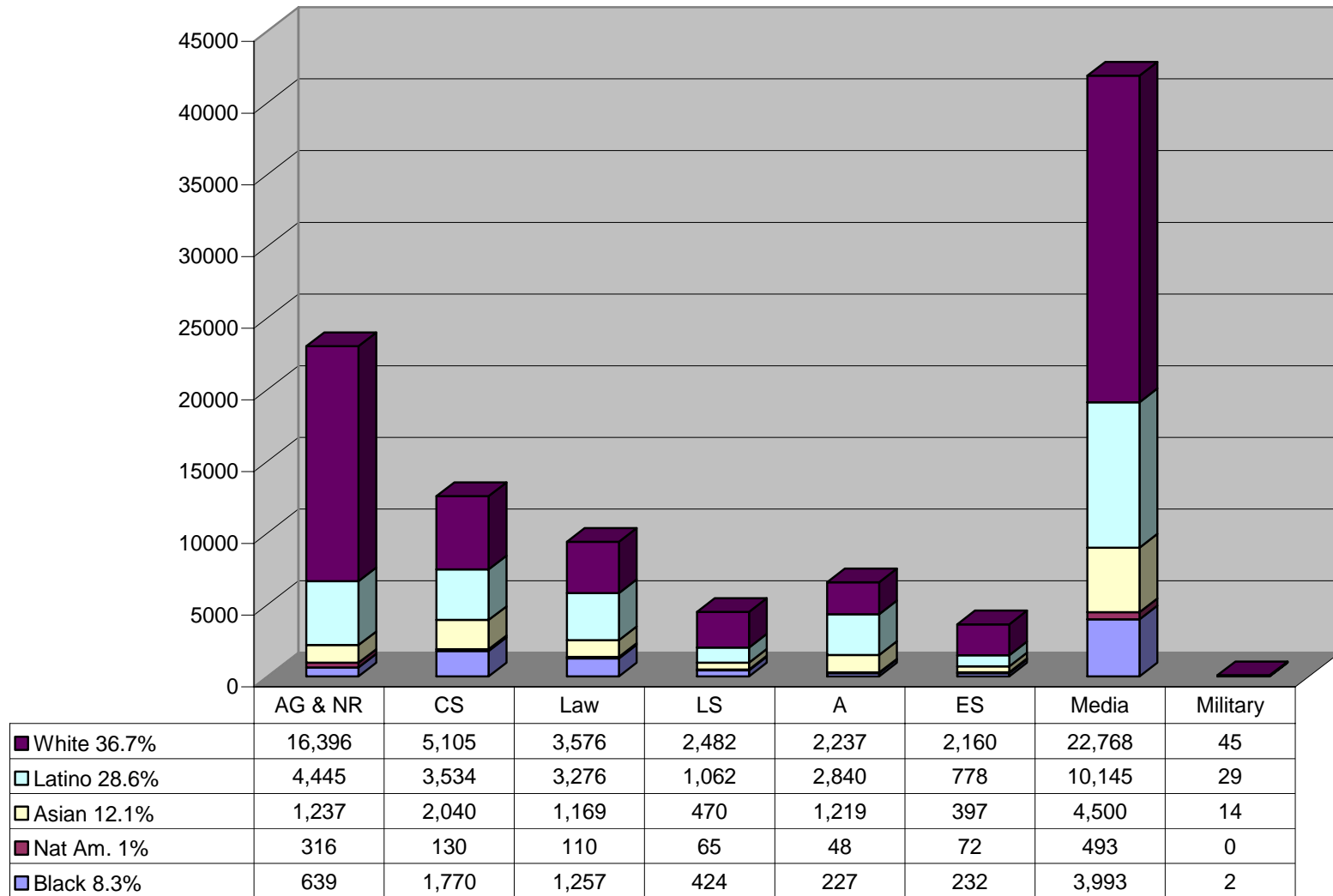
	Education	Art	Humanity	Inter- Discipline	Math	Social sci
■ White 36.7%	121,123	125,655	167,839	79,924	109,772	158,196
■ Latino 28.6%	92,255	71,337	147,164	119,155	103,110	124,050
■ Asian 12.1%	31,660	34,457	52,958	60,477	38,241	49,245
■ Nat Am. 1%	3,463	2,850	4,262	2,789	2,794	3,933
■ Black 8.3%	38,073	21,349	37,446	32,477	24,671	34,614

Mid-Enrollments: U.S. Racial Pentad

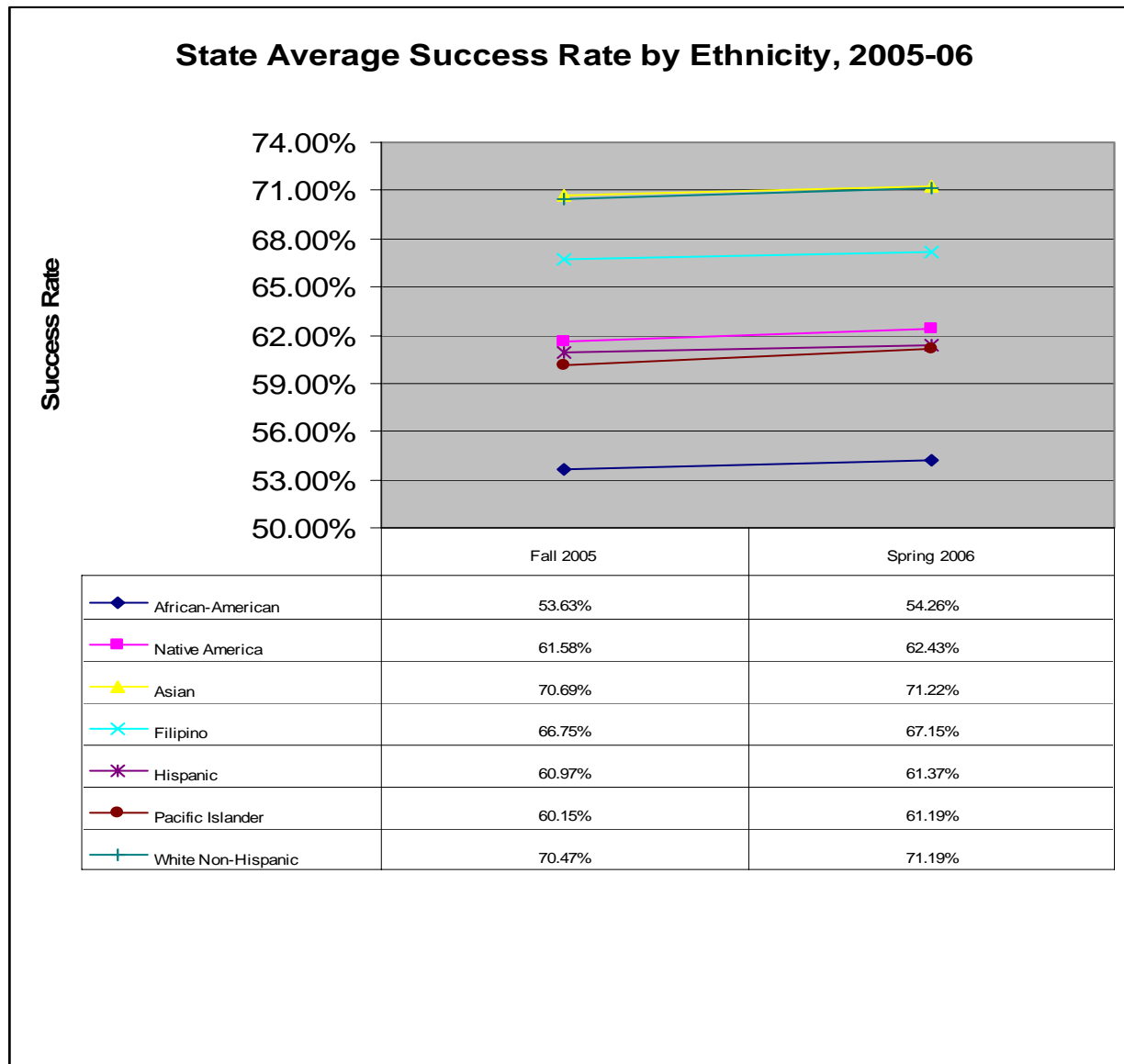


	BS & MG	FCS	H	Eng & Ind	IT	PPS	Biology sci	Foreign Lang	Physical sci	Psycho
■ White 36.7%	83,356	52,349	44,832	46,255	36,198	65,124	43,050	37,447	50,372	51,768
□ Latino 28.6%	62,517	49,286	25,279	41,774	22,952	44,090	30,162	24,900	29,929	38,963
□ Asian 12.1%	34,106	13,592	12,307	11,093	14,813	5,851	16,758	13,519	21,837	13,824
■ Nat Am. 1%	2,425	1,582	1,003	1,479	971	1,825	1,045	935	1,174	1,422
■ Black 8.3%	23,348	14,704	9,022	8,587	9,119	11,962	8,811	6,102	7,039	12,380

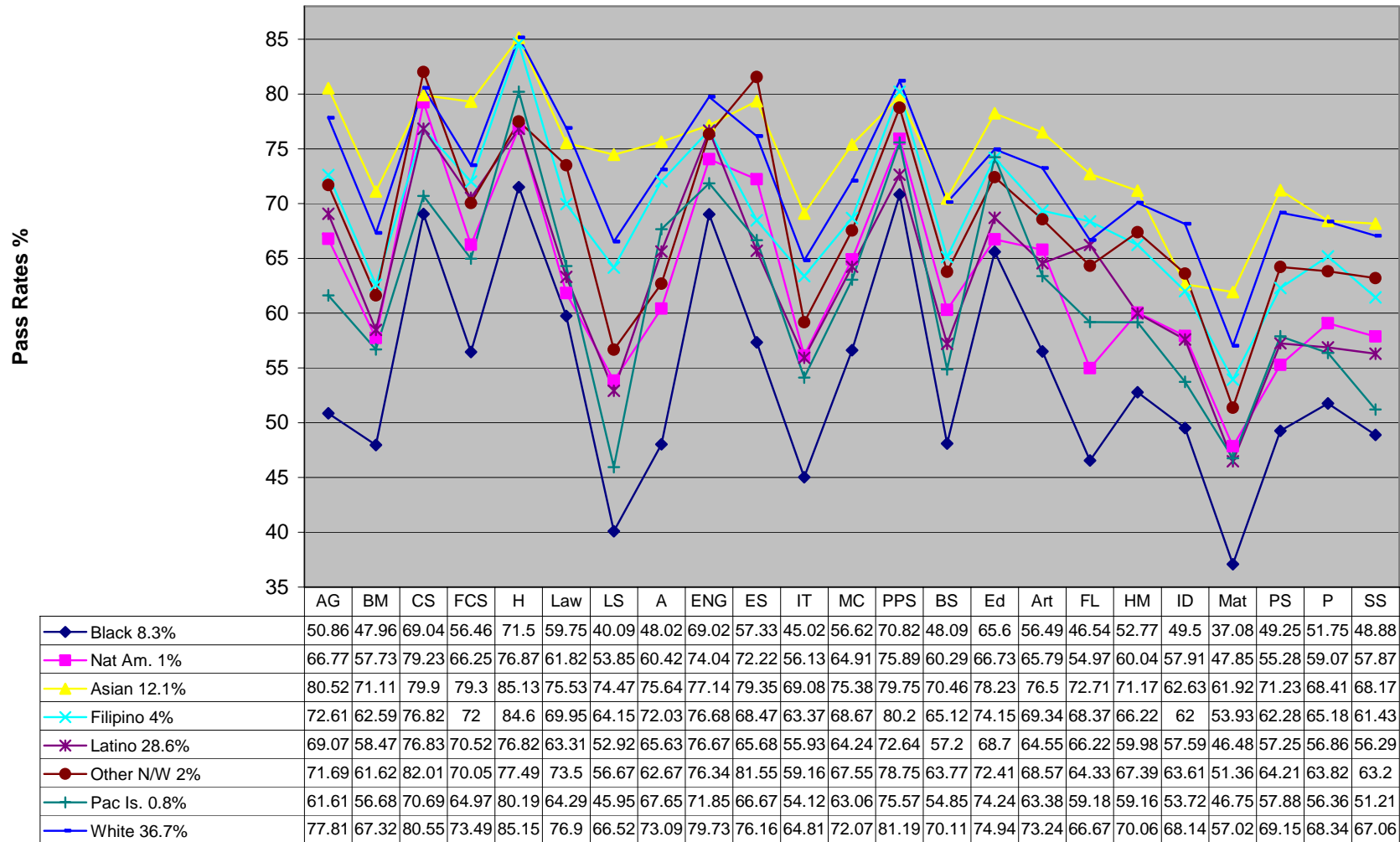
Low Enrollments: U. S. Racial Pentad



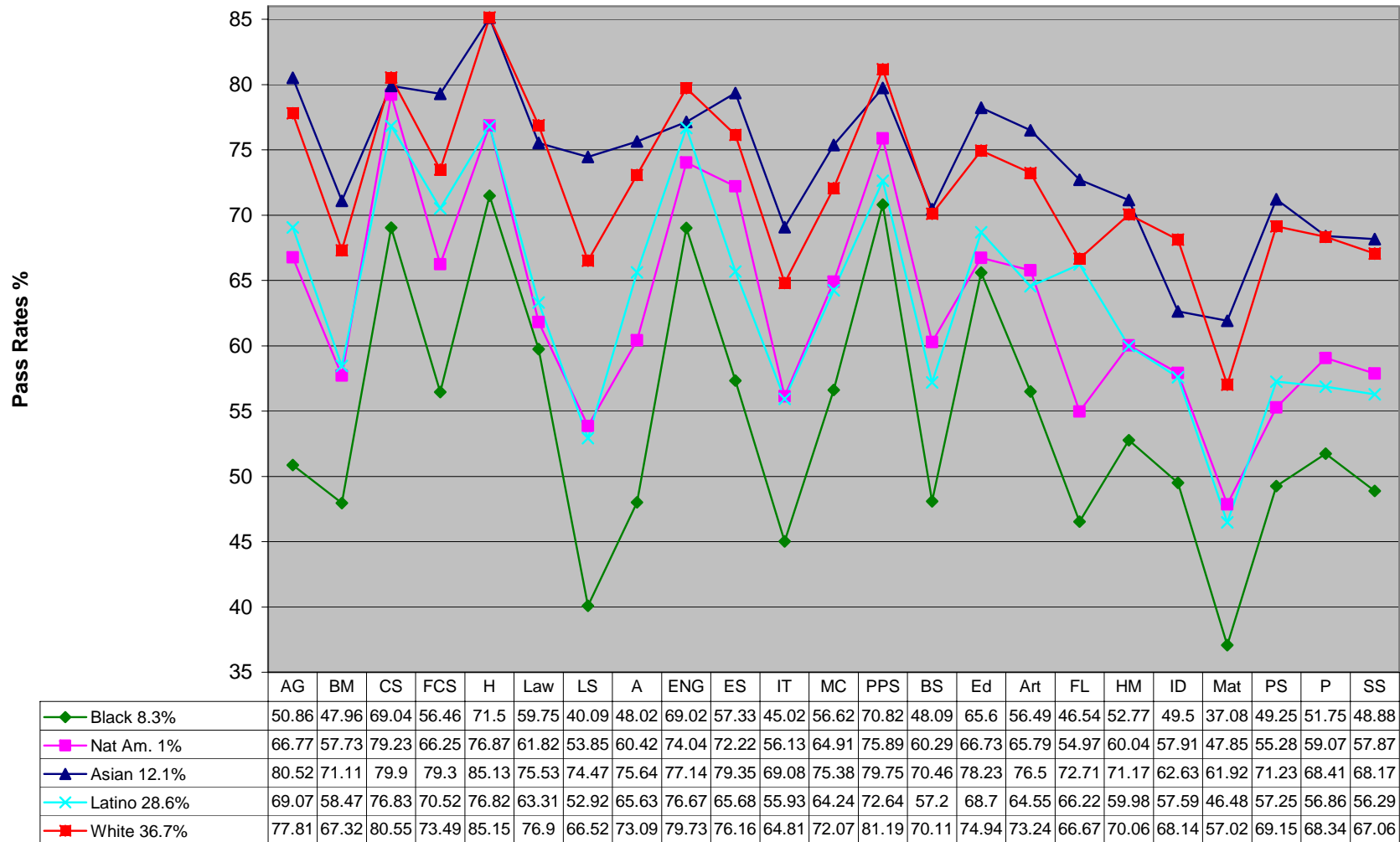
California Community College
Success Rates by Ethnicity & Race,
Fall 2005



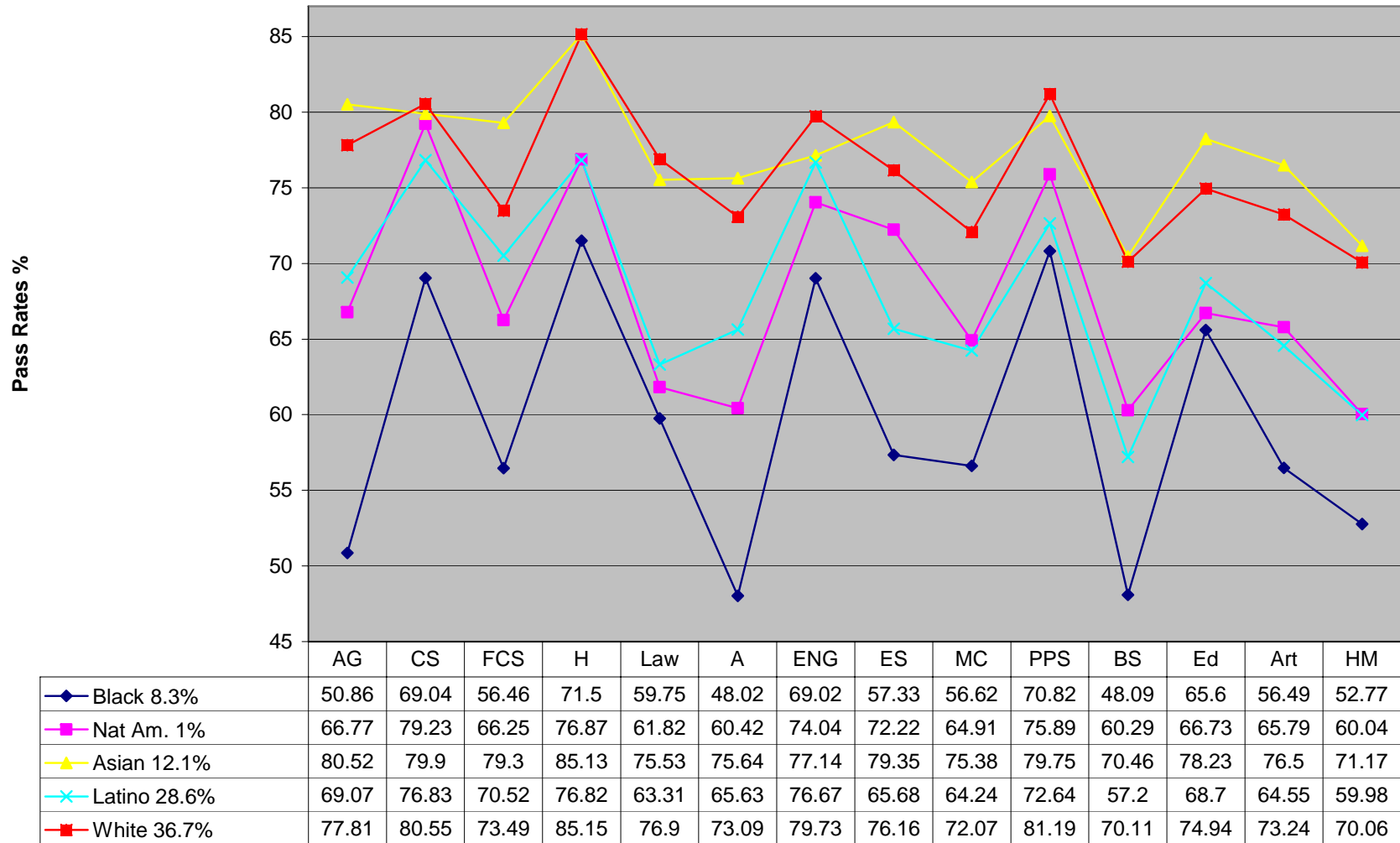
CA Community College Success Rates by Race/Ethnicity, Fall 2005



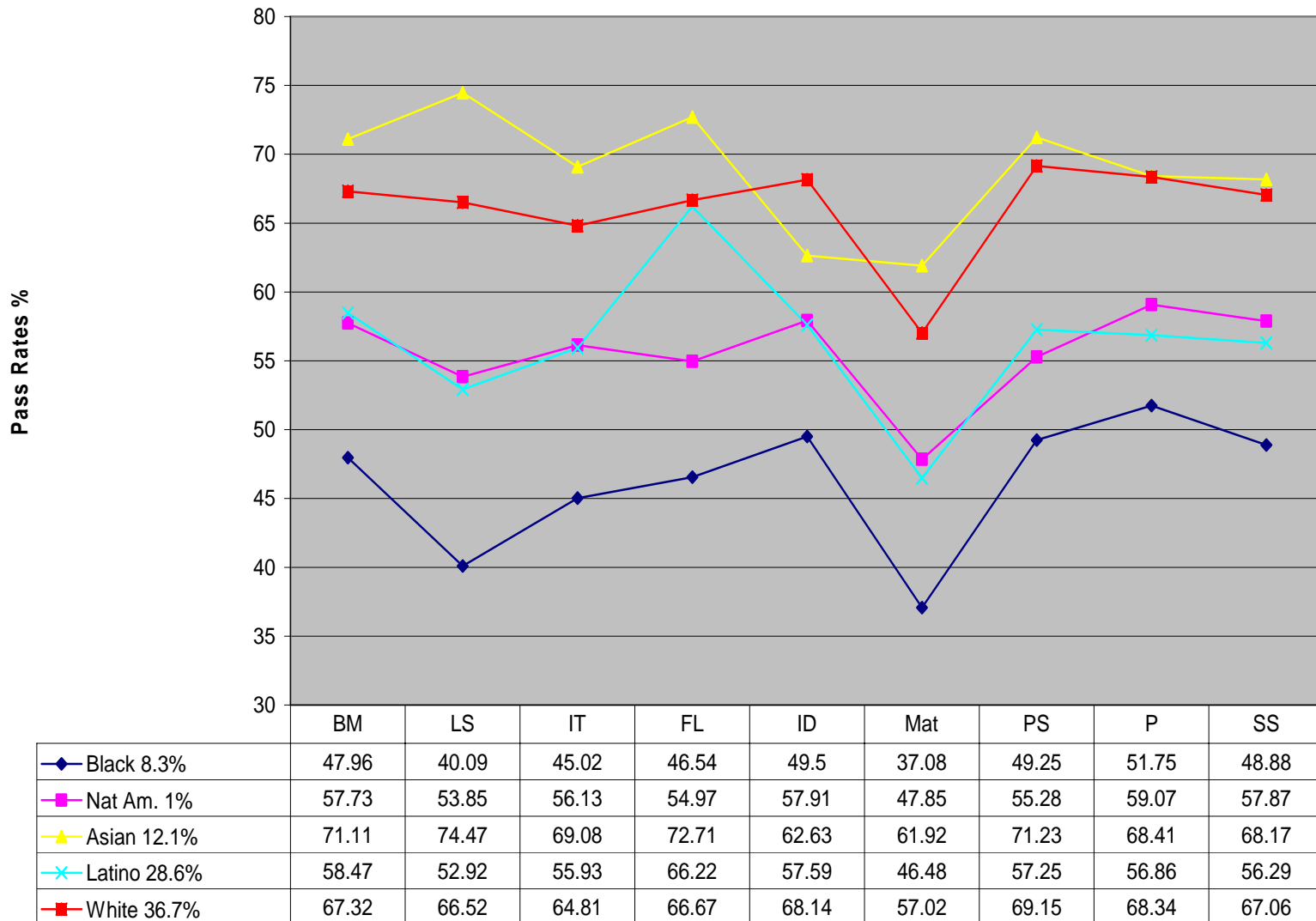
CA Community College Success Rates by U.S. Racial Pentad



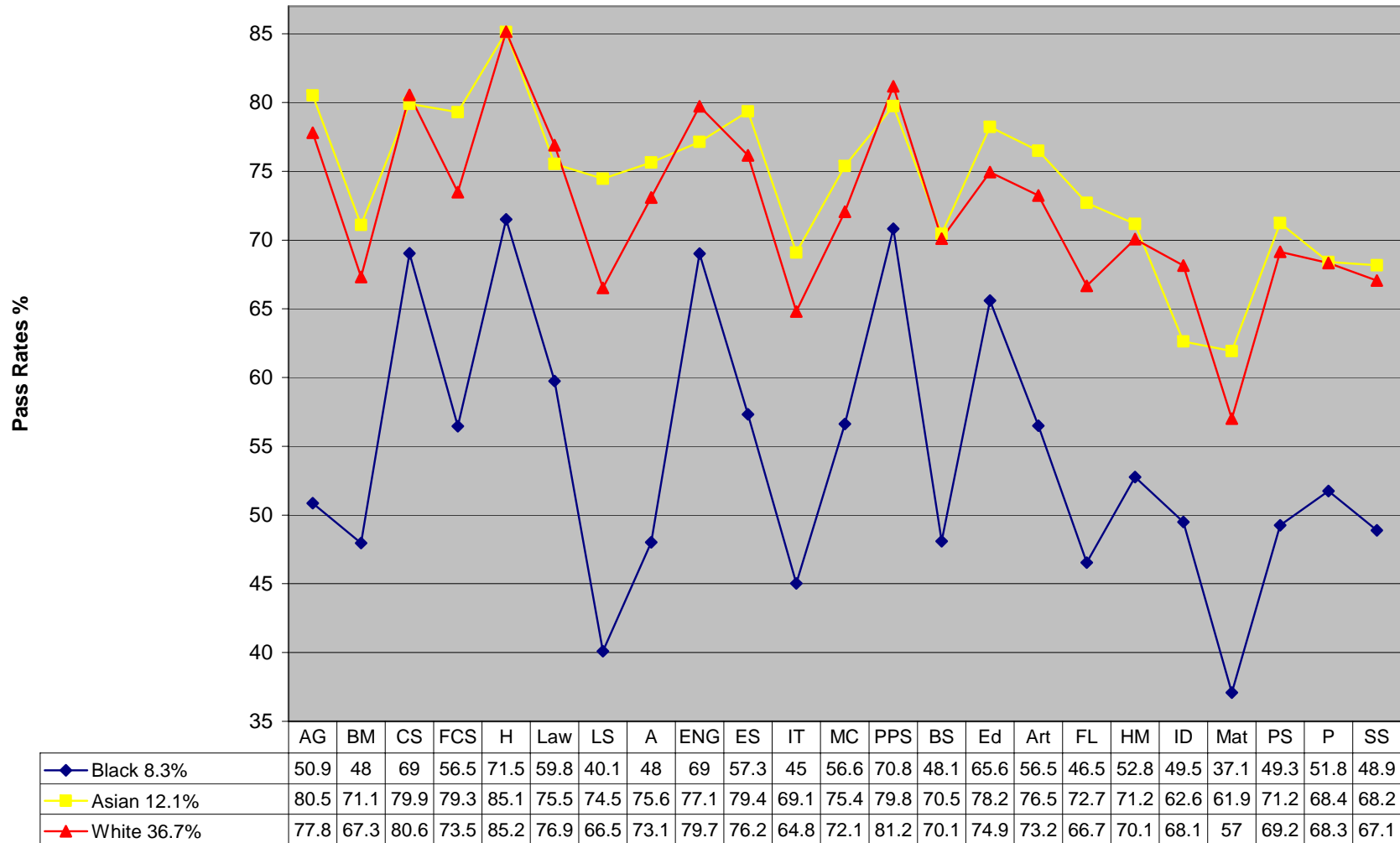
Success Rates (High White Success, +70%)



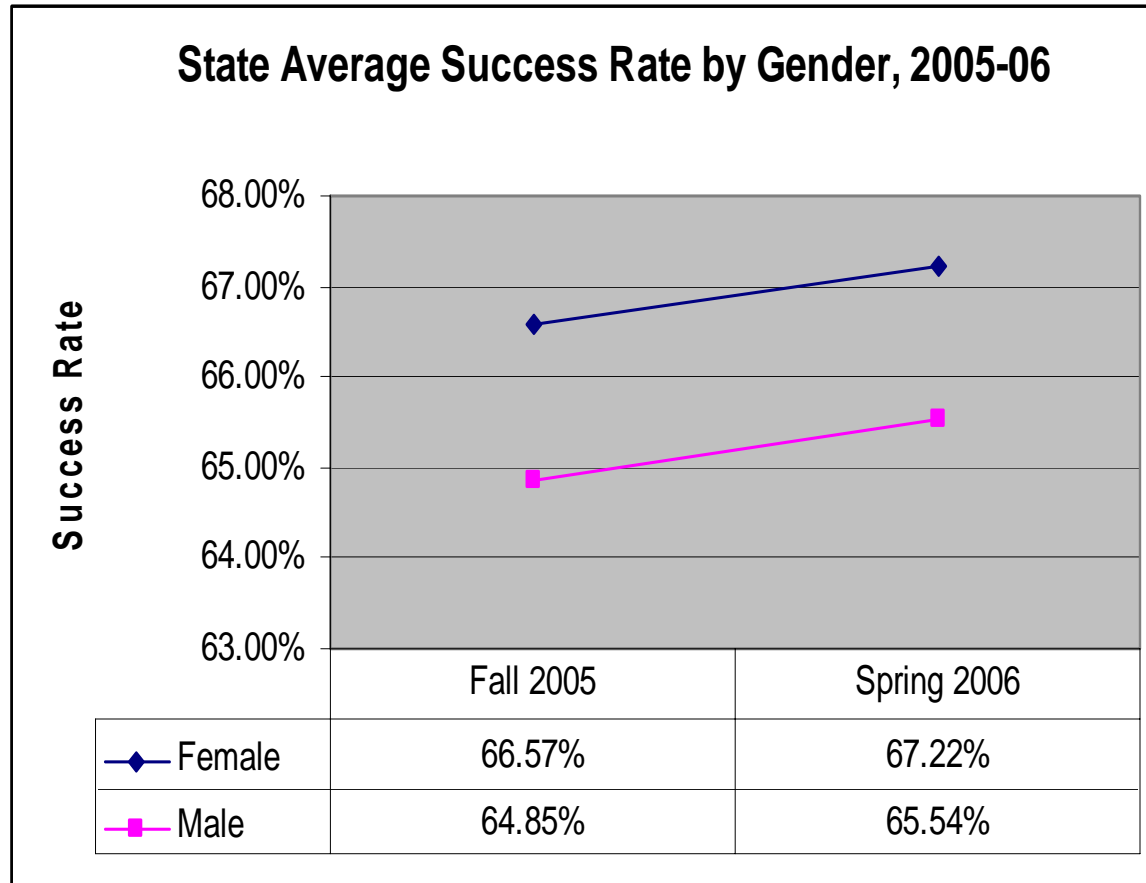
Success Rates (Low Success White, 50-60%)



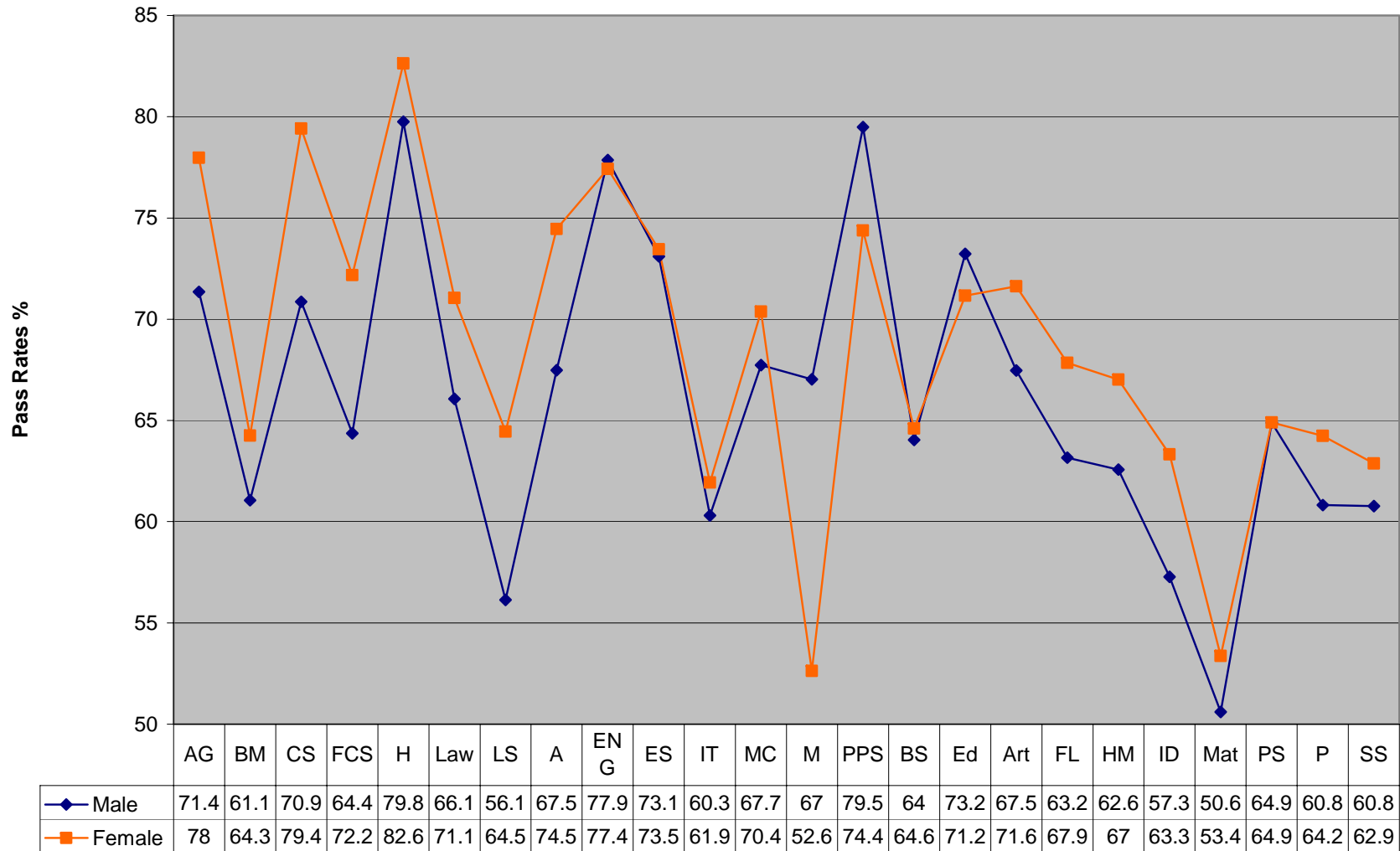
Success Rates: Black, Asian & White



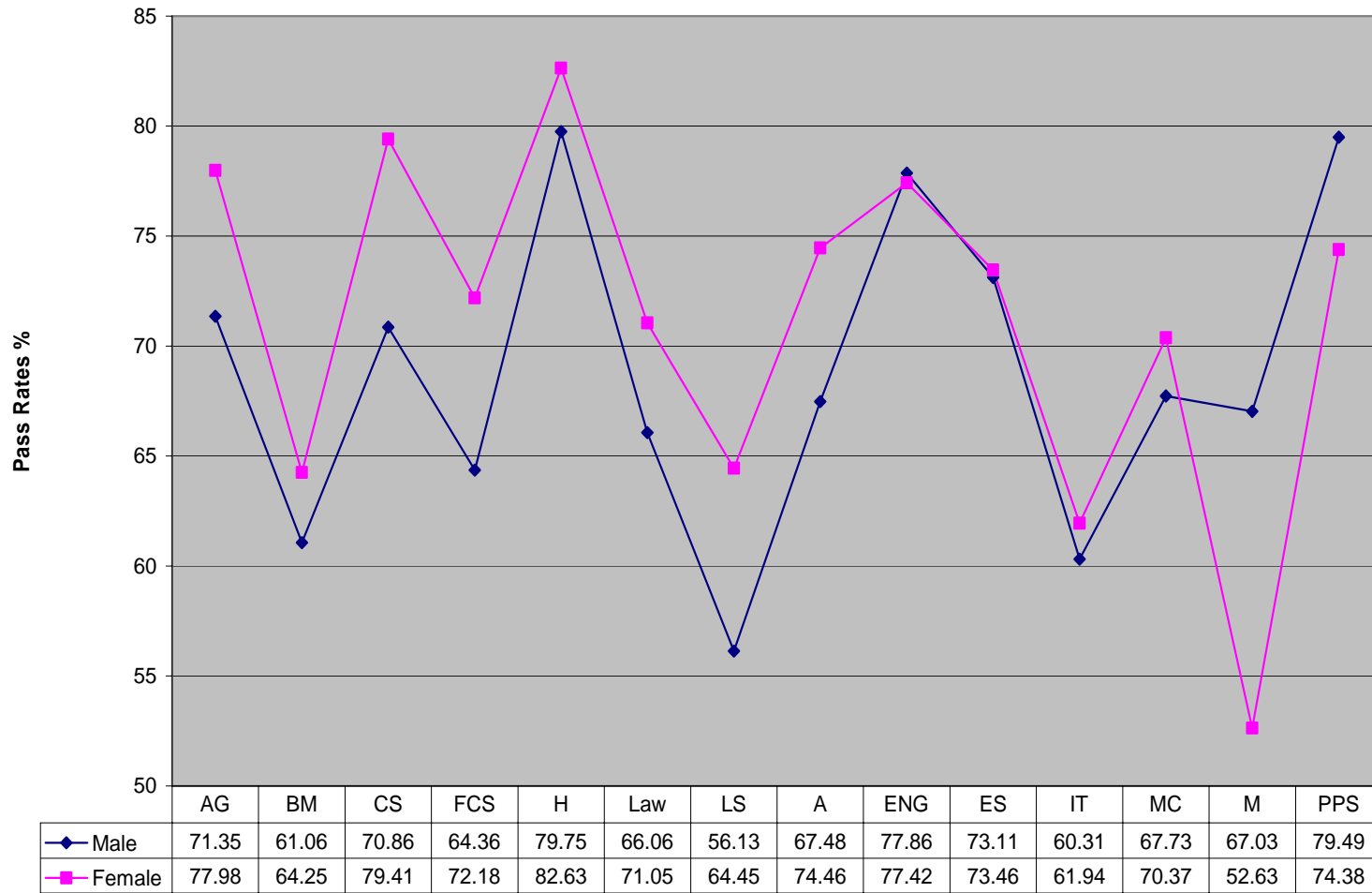
California Community College
Success Rates by Gender,
Fall 2005



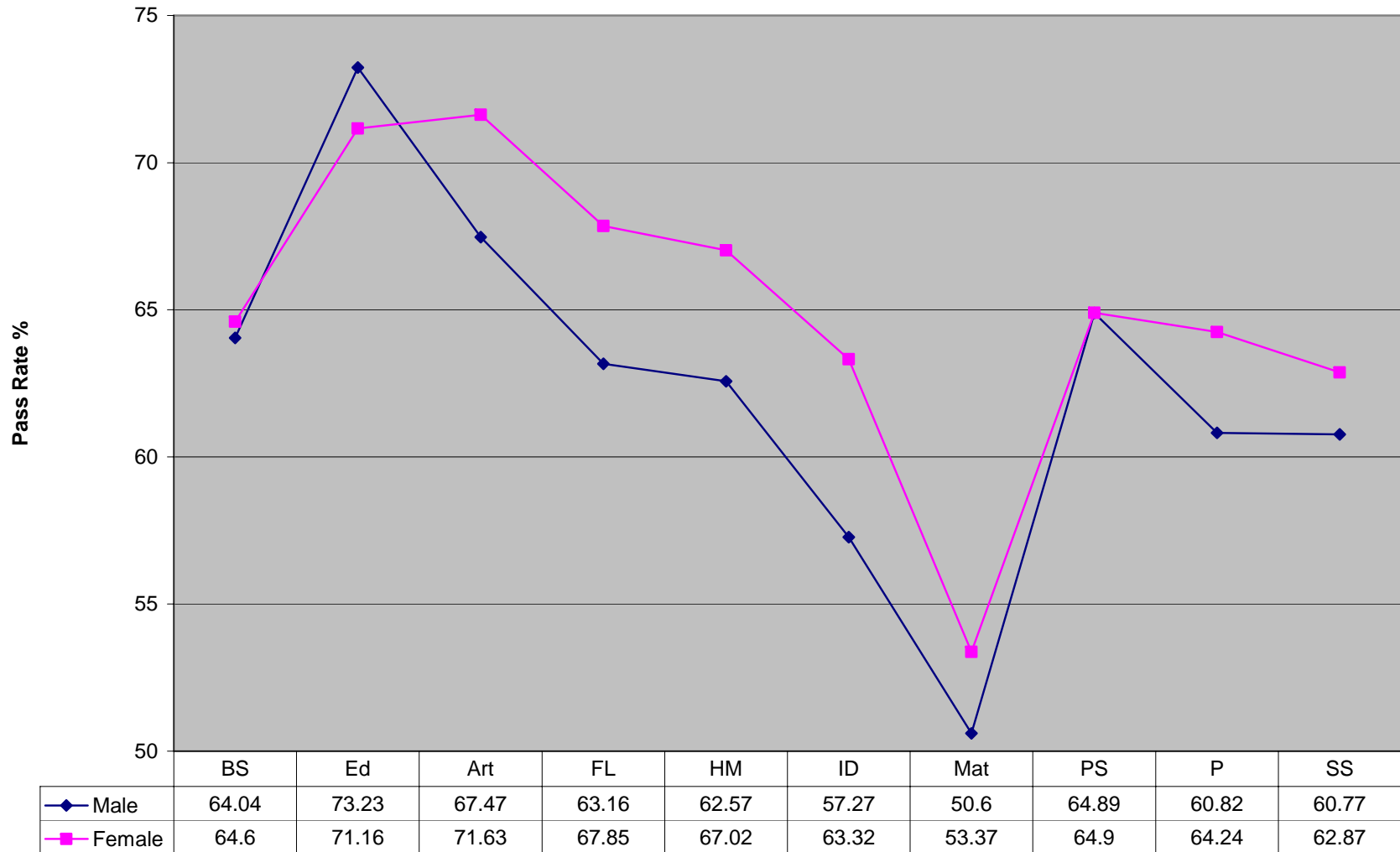
California Community College Success Rates by Gender, Fall 2005



Vocational Education Success Rates by Gender, Fall 2005



Academic Curriculum Success Rates by Gender, Fall 2005



California Community College Curricular Areas Abbreviations Key

Agricultre & Natural Resources	AG & NR	AG
Business & Management	BS & MG	BM
Commerical Service	CS	CS
Family & Consumer Science	FCS	FCS
Health	H	H
Law	Law	Law
Library Science	LS	LS
Architecture	A	A
Engineering & Industrial Tech	Eng & Ind	ENG
Environmental Sciences	ES	ES
Information Technology	IT	IT
Media & Communications	Media	MC
Military Studies	Military	M
Public & Protective Services	PPS	PPS
Biological Sciences	Biology sci	BS
Education	Education	Ed
Fine & Applied Art	Art	Art
Foreign Language	Foreign Lang	FL
Humanities	Humanity	HM
Interdisciplinary Studies	Inter- Discipline	ID
Mathematics	Math	Mat
Physical Sciences	Physical sci	PS
Psychology	Psycho	P
Social Science	Social sci	SS