

Retention and Time to Degree for Graduation

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For questions regarding the WASC Self Study contact the [WASC Coordinating Office](#).

Statement of Questions Addressed

1. To what extent do University policies and procedures enhance or inhibit the ability of students to be successful in their studies and to complete a degree program in a timely manner?
2. What resources would enable students to be more effective in their studies and complete a degree in a more timely manner?

The committee sought to address the research issues through the following inquiries.

- What factors at Cal Poly affect the retention of students?
- What factors at Cal Poly affect the time to degree completion?

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Methodology

Disclaimer

Many of the observations made in this report arose from the committee members' extensive professional experience in academia and their understanding of the processes at Cal Poly. Thus, if a citation is not mentioned in a given section, it was committee-generated, based on the knowledge and experience of the committee members.

Discussion of Importance

The issues of student retention and time to degree completion were addressed in the 1989 *WASC Report* and have remained critical issues for the ten years since. As a result of its selective admissions procedures, Cal Poly is fortunate to have highly competitive students in almost every major. The 87% return rate of first year students and the 58.9% six-year graduation rate are the highest within the CSU ([Table 1](#)). However, when one looks at the institutions which compete most strongly for the caliber of students recruited by Cal Poly, primarily the University of

California schools, Cal Poly's statistics do not look so impressive. As can be seen in [Table 2](#), Cal Poly's graduation rates are significantly lower than those of the other schools, even though the freshman retention rate is comparable.

Table 1 ([Back to report](#))

**Cal Poly and Selected CSU's
Six Year Graduation Rate for Fall 1991 First-time Freshmen (Full-time)
Includes Graduates from Campus of Origin and Within the CSU**

Campus of First Attendance	CSU Six Year Grad Rate
<i>Cal Poly</i>	58.9%
Chico	54.0%
Sonoma	49.6%
Stanislaus	49.5%
Hayward	46.4%
Sacramento	46.4%
Humboldt	46.1%
Fresno	45.8%
System-wide	40.4%

Notes: Full-time is defined as students taking at least 12 units in their first year. Rates shown are for the eight CSU campuses with the highest rates (1991 cohort).

Source: CSU Chancellor's Office and IPEDS Graduation Rate Survey, 1991 cohort, data collected in 3/97.

Table 2 ([Back to report](#))

**Cal Poly and Comparable Institutions
Selected Indicators**

Campus	Six-Year Grad Rate	Freshman Retention
<i>Cal Poly</i>	58.9%	86%
UC Berkeley	81.0%	94%

UCLA	79.0%	95%
UC Davis	75.0%	91%
UC Irvine	75.0%	91%
UC Santa Barbara	72.0%	86%

Note: These percentages are from US News using their methodology. They should be used only as a tool for comparison between these institutions, as methodology and results vary from institutional data published by Cal Poly.

Source: US News & World Report 1999 College Rankings.

In the last ten years state funding for higher education has come under increased scrutiny. Members of the legislature and the public expect universities to be more productive and efficient, and to graduate students in a timely manner. Those pressures are likely to increase as a result of the influx of students in K-12 who will be entering higher education in the coming years. Improving the time to degree rate will be an important component to any plan that attempts to address this problem.

Various studies and documents published over the years (*1989 WASC Report, Visionary Pragmatism, Cal Poly Plan, Cornerstones, Dean's Enrollment Planning Committee Report*), show a concern for the issues of retention and graduation. Principal 5 of the [Cornerstones](#) document states, "The California State University will meet the need for undergraduate education in California through increasing outreach efforts and transfer, retention, and graduation rates, and providing students a variety of pathways that may reduce the time needed to complete degrees."

The first *Student Throughput Survey* ([Appendix II.3.A](#)) completed in 1994 indicated:

Student throughput is an issue which affects many aspects of the university, including resources, class scheduling, student satisfaction, and our image to the citizens of California. We strongly believe that student throughput is very important, and we have found that throughput is affected by a variety of factors. In order for throughput to be effectively dealt with we must all take a positive approach to the various issues and problems which have caused throughput to become a problem. We should all realize that we have a commitment to the students who have been admitted to our university--we also should have a commitment to enabling them to be able to graduate from Cal Poly in a timely fashion.

Cal Poly has tried to address the throughput problem in several ways. Many departments have attempted to reduce the required number of units in their majors to 186, the minimum required for a Bachelor of Science degree. A number of departments have also increased the number of free electives available to students. (See [Appendix II.3.B](#)) In addition, effective with the 1998-99 Catalog, the GE requirements decreased from 76-79 units to 72 units, and additional flexibility in the area distributions was allowed. This decrease was retroactive to previous catalogs back to 1984, so that most Cal Poly students received the benefit of the reduced GE requirement and

expanded area distribution flexibility. Although these changes are significant, there is still a great deal that can be done to enhance the quality and selection of general education courses at Cal Poly.

Assumptions

In looking at the issue of retention, it was noted earlier that Cal Poly has an 87% retention rate of first time students from the first fall quarter to the subsequent fall quarter. This compares very favorably with other schools. However, in looking at data presented in the Office of Institutional Planning and Analysis report entitled "Retention and Graduation of Full-time Undergraduates. Cal Poly Cohorts Entering Summer/Fall 1990 to 1994," the committee noted that freshman attrition between year one and year two was 13-15% and 8-11% from year two to year three. In the absence of any definitive data on why students are leaving Cal Poly, the committee can only make educated guesses about the reasons. Clearly some type of exit interview would be helpful to an understanding of this data.

In discussions regarding the time to degree research question, it was noted that three different levels of inquiry had impact on this issue:

- System level, which describes the state of higher education in the United States and the State of California.
- Institutional level, which describes problems particular to Cal Poly that affect the retention and time to degree of students.
- Student level, where choices and attitudes of the students who attend Cal Poly affect time to degree.

System Level

A review of current national data on time to degree indicates that students everywhere are generally taking longer to obtain their bachelors' degrees than they did in the past. The *Graduation Rate Survey for the Integrated Post-Secondary Data System*, published by the CSU in March 1999, reported that 7.3% of the CSU students graduate after 4 years, 27.2% after 5 years, and 39.6% after 6 years. Many students in the survey reported dropping their unit levels below full-time status during the course of their education or dropping out all together for one or more periods. The report cautions against assuming that a four-year standard is the norm. It suggests that a more realistic assumption for time to degree for CSU students is 5.5 years. If that period is extended 150% to 8.25 years, almost 95% of CSU degree earners would be captured in the data.

Many universities in California find that a large percentage of incoming freshmen require remedial courses in Math and English. Remedial courses place significant cost burdens on the university and may delay the progress of students whose majors depend on math or English prerequisites. Cal Poly is fortunate to have the lowest number of entering freshman students requiring remediation in the CSU. At Cal Poly, 17% of entering students need English remediation as measured by the English Placement Test (EPT), and 16% need math remediation as measured by the Elementary Level Mathematics Exam (ELM). The CSU system reports averages of 47% and 54% of students requiring remediation in English and mathematics, respectively. The characteristic profile of the student group needing remediation is unknown and

may have significant impact on university resources and retention rates.

Institutional Level

Some of the factors which are institutional in nature and which affect time to degree are listed below.

- Students choosing a major on application.
 - This results in students being an asset to a particular degree program rather than to the university as a whole. Therefore, each college has a stake in its students only so long as they are actually following their majors. There is no incentive for colleges to help or to allow students to prepare for a different major.
 - Students who do want to change majors often have to continue taking classes in their first majors. By the time they change, they are behind in their new majors. This is a double cost to the university from wasted classes in the first major and extended time in the second.
- Upside-down curriculum forces students to take major courses before they have adjusted to college life.
- GE pattern at Cal Poly is restrictive in that students have very few choices in most categories. A cursory review of other CSU catalogs indicates that the other CSUs offer a much wider range of choices to fulfill GE categories. A review of UC catalogs reveals that the total number of GE units is significantly lower.
- Repeated high failure rates in some courses contribute to delays. Data obtained from the Office of Academic Records indicates that in any given quarter there are 1700 seats being occupied by students repeating coursework; if we apply the university's standard of an average class size of 38 students, the result is 45 class sections comprised of students in repeating coursework. (See [Appendix II.3.C](#) for list of classes with high failure rates.)
- The quarter system is more demanding and stressful than the semester system. There is also less time available to intervene if a student is experiencing difficulties.
- Financial aid may not be adequate to allow students to work toward a degree in a timely manner.
- Class scheduling problems prevent students from getting courses when they need them.
- Student demand exceeds available spaces in courses.

Student Level

Many factors that result in longer time to graduation are the result of choices that students make. These include:

- Major choice:
 - Many students choose a major based on the needs and wishes of parents and other supporters with no real understanding of the field they have chosen.
 - Cal Poly may be a poor fit for students who are very undecided about what field they want to pursue. They may be better off at a school that offers more flexibility in course selection and that allows a student to take more time to decide on a field of

study.

- Average number of units undergraduate students take at Cal Poly is 14.2, even though 16-18 units would be required to graduate in four years.
- Working/financial problems.
- Lack of study skills and poor time management.
- Interest in doing an internship, co-op, going abroad for a quarter or a year, or gaining other kinds of experience.
- Other responsibilities that prevent a student from pursuing a full-time education, such as children, marriage, illness in family, etc.
- Students appreciate the environment of SLO and are not in a hurry to leave.

Committees previously cited have addressed most of these issues. Recently, the Task Force on Advising, commissioned to study the state of advising on campus, found that previous concerns identified through the 1994 *Throughput Survey* still exist. These include:

- Barriers to changing majors.
- The lack of a coordinated and comprehensive advising system.
- Difficulties with class scheduling.
- Difficulty completing senior project in a timely manner.

These issues are similar to those reported by the Deans' Enrollment Planning Committee (DEPAC) in their 2/99 report.

Work Plan and Methods

A sub-group of the committee met several times to discuss the issues of retention and time to degree. These discussions led to the development of a list of possible relevant factors. The list included:

Avenue of admission--Multicriteria Admission (MCA) process: Does the MCA accurately predict student success? Do students who are admitted outside of the MCA process succeed as well as those students who come in through MCA?

High failure rate for certain courses: Numerous lower division courses, including many in math and the sciences, have failure rates in excess of 20% . How do these courses affect student progress toward a degree? ([See Appendix II.3.C](#))

Standards for progress: The different colleges of the university use different standards to determine if a student should be disqualified for academic or administrative reasons. Does this have an effect on retention and time to degree?

High-risk students: Do students who are first generation college students or who come from a lower socioeconomic status have a harder time completing their degrees?

Processes and forms: The highly structured curriculum for most of Cal Poly's majors results in many students having to file paperwork for exceptions of one kind or another. Most processes are very cumbersome; they often require the student to pick up a form in one office and go to

several other offices to obtain signatures. Could some of these processes be streamlined?

Staff resources: There is a shortage of staff in both the Records/Evaluations Office and the college advising centers. Current students do not always receive timely information regarding curricular changes. Transfer students do not receive transfer evaluations before they must register. Graduating seniors do not get directed help in completing their degree requirements.

Change of major: Approximately 30% of Cal Poly's students change majors during their college careers. There are no statistics on how many students leave Cal Poly because they cannot change into the majors they want. How does this affect retention and time to degree?

Poor scheduling of courses: Some departments appear to schedule courses without paying attention to students' needs. Many courses offered only once per year overlap with others, or an important major class will overlap with an important support class because departments don't communicate with each other. Also, especially in summer quarter, many courses will be clustered into a small range of time slots so that students have a hard time taking as many units as they would like. Should students submit a list of desired courses prior to the formulation of department course offerings?

Senior project: Failure to complete senior project has been mentioned many times as a reason why students do not obtain their degrees.

Effects of technology: Can new technologies improve the planning and processes at Cal Poly to help with the issues of retention and time to degree. For instance, an automated degree audit system might give students timely information about their progress through a degree so that they know what courses are outstanding for graduation at any given time, regardless of catalog. A predictive scheduling module could help departments plan more effectively for what courses to offer in which quarter and how many sections will be needed to meet student demand.

The committee reviewed the 1994 *Throughput Survey* and decided that it would be useful to implement it again in order to determine if there were any significant changes in student perceptions during the intervening five years. Some questions were eliminated, some reworded, and new questions were added. The survey was formatted for scantron administration and given to 617 students during Winter Quarter 1999. A copy of the survey is attached. The Assessment and Testing Center determined the class sections to be surveyed in order to obtain a random sample of students that represented an accurate cross-section of the student body. The data was compiled and returned to the committee for analysis.

A study was initiated to gather data regarding students who had applied to graduate, but who had never completed their degrees. A list was compiled of students in all of the colleges who had applied to graduate in Spring 1997 and Spring 1998, but who had not completed their degrees. At Cal Poly, students apply to the Evaluations Office to graduate in a certain quarter. After that quarter, students are not permitted to register for classes unless they file a form changing their graduation date. Choosing a graduation date allows students to go through graduation ceremonies, but there is no requirement (or check) that they have completed their degree requirements in order to participate in the ceremony.

Previous studies designed to assess how many students went through ceremonies without completing their degrees were based on "So Sorry" letters which are sent out 1-2 months after

graduation to inform students that all the requirements for their degree have not been completed. This study purposely looked at students who were nine months past their graduation dates in the case of the 1998 cohort and 21 months post graduation for the 1997 cohort. Our reasoning was that many students leave with several classes to complete, perhaps at another school, or with their senior projects unfinished. We thought that this timeframe would eliminate those students who were actually working on completing requirements post graduation ceremony.

Each student's file was pulled and checked to determine what requirements remained. The categories checked were Only Senior Project Remaining, Senior Project Plus other requirements, only Graduation Writing Requirement, Graduation Writing Requirement in addition to other requirements, Major/Support or General Education remaining, and USCP only. The results of the study are outlined in the charts below.

Students Who Applied to Graduate Spring 1997

College	Total	Graduated		Not Graduated	
		#	%	#	%
Agriculture	332	287	86%	45	14%
Architecture	143	131	92%	12	8%
Business	248	235	95%	13	5%
Liberal Arts	343	312	91%	31	9%
Engineering	316	287	91%	29	9%
Science & Math	135	113	84%	22	16%
Totals	1517	1365	90%	152	10%

Breakdown of Remaining Requirements for 1997 Spring Graduation Cohort Who Had Not Completed Degree by April 1999

College	Sr Project only remaining		Sr Project + other requirements		GWR only		GWR + other requirements		Major/Support or GE remaining		USCP only		Miscellaneous	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Agriculture	5	11%	21	47%	3	7%	1	2%	9	20%	2	4%	4	9%
Architecture	1	8%	5	42%	2	17%	1	8%	2	17%	0	0%	1	8%
Business	3	23%	3	23%	4	31%	0	0%	1	8%	0	0%	2	15%

Liberal Arts	6	19%	13	42%	0	0%	0	0%	6	19%	0	0%	6	19%
Engineering	8	28%	6	21%	1	3%	3	10%	8	28%	0	0%	3	10%
Science & Math	0	0%	9	41%	0	0%	1	5%	8	36%	0	0%	4	18%
Totals	23	15%	57	38%	10	7%	6	4%	34	22%	2	1%	20	13%

Students Who Applied to Graduate Spring 1998

College	Total	Graduated		Not Graduated	
		#	%	#	%
Agriculture	380	287	76%	93	24%
Architecture	165	142	86%	23	14%
Business	325	300	92%	25	8%
Liberal Arts	467	393	84%	74	16%
Engineering	370	310	84%	60	16%
Science & Math	180	145	81%	35	19%
Totals	1887	1577	84%	310	16%

Breakdown of Remaining Requirements for 1998 Spring Graduation Cohort Who Had Not Completed Degree by April 1999

College	Sr Project only remaining		Sr Project + other requirements		GWR only		GWR + other requirements		Major/Support or GE remaining		USCP only		Miscellaneous	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Agriculture	27	29%	36	39%	4	4%	2	2%	15	16%	0	0%	9	10%
Architecture	5	22%	2	9%	5	22%	1	4%	7	30%	0	0%	3	13%
Business	8	32%	6	24%	0	0%	2	8%	5	20%	0	0%	4	16%
Liberal Arts	22	30%	29	39%	1	1%	4	5%	13	18%	0	0%	5	7%
Engineering	18	30%	18	30%	2	3%	6	10%	11	18%	1	2%	4	7%
Science & Math	13	37%	15	43%	0	0%	2	6%	1	3%	0	0%	4	11%

Totals	93	30%	106	34%	12	4%	17	5%	52	17%	1	0%	29	9%
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The committee also brought in guests during the course of our discussions to inform us on particular areas. These included Bonnie Krupp, Institutional Planning & Analysis to bring us up to date on the results of the recent cohort study and Jane Leaphart and Kathi Peterson from the Office of Academic Records/Evaluations Unit to discuss the advantages and disadvantages of an automated degree audit system as well as other processing issues. Each member of the committee was also assigned a topic addressing a different aspect of our question to research and bring back to the committee for discussion. The topics were Advising/ Retention of High risk Students, Automated Degree Audit, Graduation Rates/Senior Projects, Undergraduate Admissions and Exit Surveys.

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Findings, Interpretations, and Analysis

While clearly there are myriad factors affecting student retention and time to degree, not all of them are factors that can be addressed at the university level. System requirements, as well as unrealistic expectations of entering students, contribute to the problem. Although the committee discussed all of the factors listed in the previous section and took into account the presentations by our guest speakers, we decided to focus our report on several key issues.

Retention and High Risk Students

The issue of student retention and dialogue regarding factors and influences that cause students to leave the institution was one that caused extensive dialogue. It became apparent that in the absence of systematic information on this topic, there could be no truly focused dialogue or solutions generated.

Currently, there is no accurate data collected to inform the institution why students choose not to continue at the university. While clearly some students leave for academic reasons, the other factors that affect attrition remain largely based on anecdotal information.

The Assessment and Testing Center is in the process of conducting a study to determine the profile characteristics of Cal Poly's high-risk student population. Until the results from this study are available, the University will continue to use national data to help define its high-risk students. The definition presently includes students who have not taken advantage of advising programs such as the Summer Advising Program, those from educationally and economically disadvantaged backgrounds, and those belonging to an underrepresented population as defined by the Federal Affirmative Action guidelines.

The [Strategic Plan](#) (4.4.1) says that "Cal Poly shall establish and implement a thorough approach to investigating the reasons why students choose to discontinue study at Cal Poly." DEAC recommends that exit surveys be instituted to determine why first year students do not return for their second year at Cal Poly. They also believe that an exit survey would be helpful in

determining why students who have applied to graduate do not complete their degrees. The 1989 *WASC Report* indicated that collecting data on attrition would be beneficial to determining why students left the university. Instituting an exit survey process is an important step in gathering the information needed to make informed decisions regarding student retention.

Advising

As the committee discussed issues related to retention and time to degree, it became clear that many problems could be traced to the lack of an effective advising infrastructure. Our review of previous reports and documents related to this question made it apparent that advising was a critical piece in helping students graduate in a timely manner.

For example, Commitment to [Visionary Pragmatism](#), which has served as one of the guiding institutional documents for the past five years, states that "the university needs to:

- 3.8 Offer proactive, consistent and accurate advising throughout the student's undergraduate experience.
- 3.9 Request colleges and programs to designate coordinators for advising.
- 3.10 Employ effective assessment and monitoring systems for advising programs.
- 3.11 Support faculty/staff/peer mentoring for students in whatever context it occurs.

Although a clear plan of action has been identified, it remains to be implemented.

Complementing the recommendations within [Visionary Pragmatism](#) is the University's [Strategic Plan](#), which, though more general in spirit, is congruent in its goals:

- 4.1 Cal Poly's administrative, academic, and student services programs shall promote student retention, success, and graduation in a timely manner.
- 4.2 Cal Poly's administrative processes affecting students shall be efficient, effective, and oriented toward service.
- 4.4 Cal Poly shall administer regularly a systematic survey of student attitudes toward academic, administrative, and support services.
- 4.4.1 Cal Poly shall establish and implement a thorough approach to investigating the reasons why students choose to discontinue study at Cal Poly.

The 1989 *WASC Report* specifically recommended "*that the university develop an improved and effective organization and process of advising.*" Most recently, the University has commissioned an ad hoc Task Force on Advising to study again the advising system and the manner in which it might be improved. This group included academic advisors and faculty from the six colleges and staff members from support areas such as Enrollment Support Services and from many distinct areas within Student Affairs. The Task Force on Advising recommended the following in their final report dated 6/99:

- Development of expanded college-based advising centers.
- Ratio of professional advisors to students should be 1:700.
- Larger facilities to accommodate student affairs personnel and to allow faculty to hold office hours in advising centers.
- Clerical and peer advisor support for each advising center.

- Formal training for all advisors (faculty, professional and peer).
- Funding to support training and assessment.
- The committee strongly recommends mandatory advising for all students throughout their Cal Poly career once the infrastructure outlined above is in place

Automated Degree Audit/Predictive Scheduling

In theory, there is agreement that an automated degree audit would be beneficial to student progress because it would allow students and their advisors to know what degree requirements remain. It would also allow the university to do predictive scheduling and to use this information to plan future course offerings. However, there are several factors that make the implementation of a full degree audit system at Cal Poly problematic. These include:

- The transitional [General Education and Breadth](#) (GEB) pattern was applied retroactively to eight existing Cal Poly catalogs and a new GEB template is scheduled for 2001.
- The catalog cycle was changed from a two-year catalog to a one-year catalog.
- Faculty have been encouraged to revise curricula yearly which has resulted in different course numbering and unit values which need to be applied retroactively to previous catalogs.
- The money to fund personnel and equipment to maintain an automated degree audit has not been forthcoming.
- Historically, there have been large numbers of exceptions to established curricula (blanket substitutions, petitions, experimental courses, etc).

Currently, the university is beginning to implement *PeopleSoft*, a system that is advertised as having the potential to provide automated degree audits. Since the implementation will take several years to complete, there is no way of knowing right now whether or not this is a viable option.

There are clearly many challenges to be addressed in order to achieve degree audit automation. Such systems exist at other institutions. The committee recommends that these issues be investigated in order to clarify institutional direction in these matters. If it proves unfeasible for an automatic degree system to be successfully implemented then this reality needs to be acknowledged and alternative approaches developed to assist in quality advising.

Graduation Rates/Senior Projects

The Academic Senate should look at ways to expedite the completion of students' remaining degree requirements. Focus should be directed on those requirements that seem to be problematic for many students. The information gathered by the committee indicates that senior project, the graduation writing requirement and general education courses are often the requirements left uncompleted upon separation from the university.

The committee suggests a review of other campuses that restrict attendance to graduation ceremonies be assigned to the Instruction Committee of the Academic Senate for discussion. In the case of senior project, the committee feels that a manageable senior project that must be completed by a very specific deadline would lead to the completion of the senior project

requirement. For example, the Soil Science Department has their seniors sign a contract that states they will not go through commencement without having their senior project completed. If Cal Poly instituted a mandatory graduating senior exit survey, perhaps we would gain a better understanding of the possible barriers students face during the senior year that may prevent them from finishing their graduation requirements.

Undergraduate Admissions

The committee looked at our undergraduate admissions process to determine if anything that was done in the admissions process could have an effect on student retention or graduation rates. Cal Poly uses a multicriteria admission process (MCA) for selecting students. Five categories are used to evaluate and to screen freshman candidates. They include GPA earned in specific CSU preparatory courses, overall GPA, electives from the CSU preparatory course requirements, test scores (e.g., SAT and/or ACT), and work experience and/or participation in extra-curricular activities. Transfer candidates are evaluated and screened for admission on the basis of four categories, including major-specific courses completed, GE courses completed, GPA in courses completed, and related work experience and extracurricular activities.

Three scoring processes are used to select students. The first determines if students have met the minimum eligibility standards established for each program. The second process selects the top 60% of the students to be offered admission. The remaining 40% of the students offered admission are chosen by a third process, which utilizes bonus points based on non-academic factors that are important to the university, produces a supplemental ranking of the remaining qualified candidates. A study completed by Roxy Peck, Associate Dean for the College of Science and Mathematics, indicates that for freshmen the MCA is significant in predicting a student's Cal Poly GPA, the average number of units completed per quarter, and the combination of hours completed and GPA at Cal Poly.

It is unclear whether or not the same holds true for the selection of transfer students. There have been no studies conducted to determine if the MCA is valid for this group of students. Currently, an MCA criterion for transfer admission varies significantly from college to college. The College of Engineering MCA ensures that entering students will have completed the majority of their major and support courses. Thus it is unlikely that they will change to majors outside of engineering because of the time they have already invested in the math, science, and engineering coursework at their previous institutions. Many other majors at Cal Poly do not put emphasis on the completion of major and support courses prior to entering Cal Poly. This approach to the MCA weighting may account for the high success of engineering transfer students at the university. (See page 14 of **Institutional Planning and Analysis** report entitled "Retention and Graduation of Full-time Undergraduates. Cal Poly Cohorts Entering Summer/Fall 1990 to 1994".)

Throughput Survey Results

The committee intended to replicate the **1994 Throughput Survey** in order to build upon the previous data for benchmarking purposes. Prior to discussing the results it is important to note that the representative student responses from the six colleges did not yield as even a profile as would have been optimal.

Comparison of Percentage of Students with Percentage Enrolled:

By College, Standing, Gender	Students Sampled	Current Enrollment
Agriculture	29%	21%
Architecture and Environmental Design	9.4%	9%
Business	17%	15%
Engineering	27.3%	25%
Liberal Arts	10.4%	17%
Science and Mathematics	6.8%	11%
Seniors	49%	
Juniors	25.8%	
Sophomores	13.3%	
Freshmen	8.8%	
Graduates	3%	
Males	61%	56%
Females	39%	44%

The findings outlined below are provided with the caveat that there are discrepancies in the college distribution between the two samples. Some of the significant findings from this survey are listed below.

Time to Degree

Question: When did you first enroll at Cal Poly?

		1994	1999
Results	0-4 years ago	73%	92%

5-6 years ago	22%	7%
more than 6 years ago	5%	1%

Question: Approximately what percentage of your transfer units were accepted by Cal Poly?

		1994	1999
Results	90-100% of units	35%	20%
	70-90% of units	34%	30%

Question: How many quarters have you attended Cal Poly?

		1994	1999
Results	1-3 quarters	19%	20%
	4-6 quarters	22%	30%
	7-9 quarters	21%	22%
	10-12 quarters	19%	19%
	more than 12 quarters	18%	9%

Question: How satisfied are you with your rate of progress towards your degree at Cal Poly?

		1994	1999
Results	Dissatisfied	24%	
	Neutral	35%	
	Satisfied	41%	

Results	Not Satisfied		23%
	Satisfied		64%
	Very Satisfied		13%

Question: Using the scale provided, please indicate the level of importance that you place on each of the following four goals (A-None, B-Low, C-Moderate, D-High, E-Very High):

	A	B	C	D	E
Completing a degree as quickly as possible.	2%	7%	27%	34%	30%
Obtaining an internship or co-op.	9%	12%	21%	32%	26%
Taking advantage of extra-curricular activities.	11%	20%	32%	25%	13%
Having fun while going to school.	5%	7%	24%	33%	32%

The survey suggests that students are moving through the system more quickly than they have in the past. Even though the breakdown by students by class level was similar in both surveys, 92% of the current students report being enrolled 0-4 years versus 73% for the **1994 Throughput Survey**. Only 9% of the current students report being here more than 12 quarters whereas previously 18% of the students reported being here more than 12 quarters. This may be occurring because the number of units required for graduation has been slowly declining and students seem to be taking more units per quarter. However, transfer students report fewer units are being accepted which presumably results in longer times to graduation.

The data indicates that the students taking the **1994 Throughput Survey** were just as satisfied as those in the recent survey with their rate of progress toward obtaining their degree. Although 64% of the students rated completing their degree as quickly as possible a high priority, the same percentage felt it was equally as important to have fun while going to school.

Unit Reduction

Question: Did working ever make you reduce the numbers of courses/units that you otherwise would have taken?

		1994	1999
Results	Yes	50%	33%
	No	50%	67%

Question: Have you ever reduced your academic load to meet non-academic concerns other than work?

		1994	1999
Results	Yes	50%	31%
	No	50%	69%

Question: Have you ever reduced your academic load to keep your GPA from dropping?

	1994	1999
--	------	------

Results	Yes	31%	40%
	No	69%	60%

Fewer students are taking reduced course loads because of work or other non-academic responsibilities. Instead, they are trying to balance both work and school. However, more students appear to be taking lighter course loads in order to keep a higher GPA. This may result from students' perception that a high GPA is important for their future success.

Problems Obtaining Classes

Students were asked if they had problems obtaining general education and major courses. High percentages of students (70%) reported that they could not get into classes because either space was not available or the class conflicted with another required class. From 15 to 30% of the students reported taking unnecessary courses to deal with these problems.

Changing Major

Question: Have you changed your major at Cal Poly?

		1994	1999
Results	Yes	30%	20%
	No	70%	80%

Ten percent fewer students reported changing their major than in the previous survey. Without more information it is difficult to know what this means. It could indicate that students are more informed about their majors when they enter, or they are happy with the choices they made; conversely, it could mean that it has become more difficult to change.

Internship/Co-op

Question: Have you ever participated in or do you plan to participate in an internship?

		1994	1999
Results	Yes	45%	81%
	No	55%	19%

Question: Have you ever participated in or do you plan to participate in a co-op?

		1994	1999
Results	Yes	30%	36%

No

70%

64%

Although more information is needed to determine why students appear to be highly motivated to pursue internships, this trend might have an impact on prolonging a student's time to degree, especially if the internship is not part of the degree program.

Advising

The questions dealing with advising show that 82% of students have met with their academic advisor; 60% report being satisfied with general education advising; and 70% report being satisfied with advising in their major. However, when asked to be specific about where they have sought academic advice in the last year, more students asked their peers for advice than any other source.

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Discussion, Recommendations, and Conclusions

The issues of retention and time to degree have been discussed at Cal Poly for many years. Improvements have been made to the curriculum by decreasing the number of units in many majors and by lowering the number of GE units required. It is still too soon to tell how much of an impact this will have on graduation rates. Although these are promising changes, much more needs to be done.

As the committee discussed the range of factors related to improving retention and time to degree, some findings became clear:

1. Advising stands out as an important component of any system whose goal is to improve retention and graduation rates. The advising structure at Cal Poly has evolved from the traditional faculty-only advising to the hodge-podge system we have now. It is time to begin strengthening advising by creating a system of coordination for advising efforts, requiring training for faculty and staff who are advisors, and by working to develop more consistent policies among the advising offices. There should be a sufficient number of advisors for each college so that they can be proactive with students, helping them before they get into academic difficulty. The **Task Force on Advising** recommendations are a step in this direction.
2. The university should address some of the barriers that appear to hinder students' progress through the university:
 - The completion of senior project seems to be a significant hurdle for many students. Departments should develop a more structured approach to this requirement.
 - Students need more timely information about their academic progress and less paperwork. Enrollment Support Services should investigate automating student petitions.
 - Yearly curriculum changes make it difficult for students to know what their

requirements are for graduation. Even when a curriculum has been published and distributed, there often are numerous blanket substitutions and hidden changes that students are not aware of prior to registering for classes.

- Students who are at risk for not being successful at the university should be identified and given early support.
- We do not know very much about why students leave the university because we do not ask them. This makes it very difficult to discuss possible solutions to the problem. Exit interviews for students who leave before graduation, as well as for those who leave after graduation, would give very valuable information for planning improvement strategies.
- It is clear that significant numbers of students go through graduation ceremonies and then never graduate. Many parents don't realize that their student has not graduated. Many students are pressured into participating in the ceremony to please parents and then once the excitement is over and the first job begins, forget to finish up. Developing a system that insures students have completed or are in the process of completing their graduation requirements before allowing them to participate in ceremonies would have a positive impact on the graduation rate.
- There are a number of questions that need to continue to be addressed. These include:
 - To what extent does declaring a major impact retention and time to degree issues?
 - To what extent does the disparity in the approach to senior project between academic programs impact time to graduation issues?
 - Should the university consider adopting a semester system? To what extent does the quarter system impact students' retention and time to degree?
 - How can the university continue to find out more information about student characteristics that lead to student success and degree completion?
 - Should the university implement mandatory advising?

The work of the subcommittee led to a number of specific recommendations that we believe needs to be implemented. They are detailed below and include, parenthetically, our suggestions of which authority or office ought to be responsible for their implementation.

University

- Provide leadership support to develop a comprehensive, college-based advising system, as outlined in the Task Force on Advising report, that will provide support for intrusive advising for high risk students and general advising for all students to promote timely progress toward a degree. (Provost)
- Develop minimum delivery standards for college based advising centers.

(Provost/Colleges)

- Implement advisor training for all faculty, staff, and peer advisors. (Provost/Colleges)
- Study the change of major issue and create a uniform policy across all colleges. (Academic Senate)
- Stabilize the curriculum process by creating rigorous policies for curriculum management that will preclude the reuse of numbers, the use of experimental courses, and the abuse of blanket substitutions. (Curriculum Committee of Academic Senate)
- Review the current status of the automated degree audit system. If it proves unfeasible for an automated degree audit system to be successfully implemented, then this reality needs to be acknowledged and alternative approaches developed and funded to assist in quality advising. Look at automating and simplifying other aspects of enrollment management. (Enrollment Support Services)

Department

- Develop methods to insure that the scope of the senior project is manageable and that the written report is completed in a timely manner. (Department Chairs)
- Review their MCA requirements to insure that transfer students selected by the MCA will be juniors in their major as much as possible. (College Associate Deans)
- Eliminate course-scheduling conflicts between major courses, and between major and support courses. (College Deans)

Student

- The university should consider research regarding the student characteristics that profile those students entering the university needing remediation or who are considered at risk. This data will assist the university in determining to what extent students entering Cal Poly in need of remediation compose that group who are not retained and/or who require prolonged time to degree completion. Once this information is known, appropriate interventions can be developed. (Office of Institutional Planning and Analysis)
- Institute mandatory exit surveys for all students (particularly freshmen) who leave the university. (Assessment and Testing/Colleges)
- Institute mandatory graduating senior exit surveys to assess their college experiences and what improvements might be made. (Assessment and Testing/Colleges)
- Consider implementing a policy that prohibits students from participation in commencement activities unless all graduation requirements have been completed. (Vice Provost Academic Programs/Colleges)

The subcommittee recognizes that the issues of retention and time to degree are complex and difficult. We have identified a number of specific problems and made specific recommendations. None of these recommendations is likely to be fully effective, however, so long as Cal Poly and other universities continue to design degree programs on a four-year time frame. Perhaps it is time that Cal Poly recognizes that the traditional student who graduates in four years is no longer the norm, and that the university needs to develop a different standard for measuring graduation rates.

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Please read the following DRAFT reports and mail your suggestions and responses to the [WASC Coordinating Office](#).

Appendices

Appendix II.3.A

Available in the Academic Programs Office on hard copy only.

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Appendix II.3.B

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Total Units by Undergraduate Major

Comparison of 1992-94 Catalog with 1999-2000 Catalog

Accredited program: Cal Poly's past practice has granted exemptions to the "minimum of 9 units of free electives" to accredited programs that demonstrate need for exemption.

Note: Effective with the 1998-99 Catalog, the GE transition program decreased from 76-79 units to 72 units and provided more flexibility in area distributions than prior GEB. This created a "savings" of approximately 7 units per program (decrease total units).

	1992-94		1999-2000	
	Total Units	Free Electives	Total Units	Free Electives
College of Agriculture				
BS Agricultural Business	198	10-7	186	14
*BS Bioresource & Agricultural Engineering <i>formerly Agricultural Engineering</i>	206	6	196	0

BS Agricultural Science	198	10	192	7
BS Agricultural Systems Management <i>formerly Agric Engineering Technology</i>	198	8	186	6
BS Animal Science	198	15	186	15-18
BS Crop Science	198	10-9	186	12
BS Dairy Science	198	15-18	186	15
BS Food Science	198	16	186	16
*BS Forestry and Natural Resources	198	7	192	4-11
BS Fruit Science	198	10-9	186	10
*BS Nutritional Science	198	16	186	7-14
BS Environmental Horticulture Science <i>formerly Ornamental Horticulture</i>	198	8	190	7-11
BS Plant Protection Science	--	--	186	15
*BS Recreation Administration			186	13
BS Soil Science	198	10	188	9/11
College of Architecture and Environmental Design				
*BS Architectural Engineering	210	0	201	0

*B. Architecture	248	9	248	10
*BS City and Regional Planning	198	9	193	9
*BS Construction Management	198	0	191	0
*BLA Landscape Architecture	236	9	236	15-16
College of Business				
*BS Business Administration	198	7-16	186	23-30
BS Economics	198	22	186	29
*BS Industrial Technology	198	14-19	186	8
College of Engineering				
*BS Aeronautical Engineering	210	0	196	0
*BS Civil Engineering	209	0	203	0
*BS Computer Engineering	209	0	196	4
*BS Computer Science	198	15	186	16
*BS Electrical Engineering	208	0	199	0
*BS Environmental Engineering	209	0	206	0
BS General Engineering (Engr Science)	204	8	190	9
*BS Industrial Engineering	210	0	203	0

*BS Manufacturing Engineering	--	--	201	0
*BS Materials Engineering	208	3	200	4
*BS Mechanical Engineering	210	0	202	0

	1992-94		1999-2000	
	Total Units	Free Electives	Total Units	Free Electives
College of Liberal Arts				
*BS Art and Design	198	14-16	198	13
BA English	186	31	186	53
BS Graphic Communication	198	24-34	186	18
BA History	186	26	186	43
BS Child Development <i>formerly Human Development</i>	198	11-13	186	24
*BS Journalism	198	20	189	0
BA Liberal Studies	186	10-20	186	16
BA Modern Languages & Literatures	--	--	186	22
BA Music	186	18	186	27
BA Philosophy	186	53	186	62
BA Political Science	186	31	186	33-34

BS Psychology	--	--	186	22
BS Social Sciences	198	14	186	30
BA Speech Communication	186	20	186	39
BA Theatre Arts	--	--	186	47
College of Science & Mathematics				
BS Biochemistry	187	31	186	19-32
BS Biological Sciences	198	14-21	186	23-26
BS Chemistry	189	9	186	9-11
BS Ecology and Systematic Biology	197	10-21	186	17-26
BS Mathematics	198	27-28	186	28
BS Microbiology	198	10	186	18-22
BS Kinesiology <i>formerly Physical Education</i>	198	8-13	186	15-27
BS Physical Science	189	35	186	40-41
BS Physics	194	9	186	16-17
BA Physics (new program effective Fall 1999)	--	--	186	45
BS Statistics	189	13	186	27-28

Appendix II.3.C

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Hi-Risk Course Report for Selected Classes - 1992-98

California Polytechnic State University

A Summary of Averages over a Six-Year Period

College of Agriculture

Class	Campus	DFs	%
AG 0250	789	87	11%
AGB 0201	300	13	4%
AGB 0212	304	45	15%
AGB 0213	224	28	12%
FNR 0101	255	28	'11%
FNR 0201	253	26	11%
FSN 0101	160	6.	3%
FSN 0121	119	0	0%

FSN 0170	45	2	5%
FSN 0210	672	86	5%
FSN 0211	117	5	4%
SS 0121	619	133	22%
SS 0221	148	33	22%

College of Architecture

Class	Campus	DFs	%
ARCE0221	248	66	27%
ARCE0222	232	76	33%
ARCE0223	54	8	15%
ARCE0224	46	2	3%
ARCE0226	166	21	13%
ARCE0227-	55	9	17%
ARCHOI 06	270	39	15%

College of Business

Class	Campus	DFs	%
ACTGO224	454	42	10%
ACTGO225	472	40	9%
ACTGO304	150	14	9%
ACTGO321	283	49	17%
ACTGO322	172	30	17%
ACTGO323	143	--13	9%
BUS 0101	177	26	10%
BUS 0201	91	25	27%
BUS 0207	745	53	7%
ECON0105	51	7	13%
ECON0201	1,410	295	21%
ECON0211	455	86	19%

ECON0221	415-	34	8%
ECON0222	467	46	10%
ECO'NO337	427	43	9%
FIN 0342	519	56	11%
MIS 0321	579	14	3%
MKTGO301	641	17	3%

College of Engineering

-Class	Campus	DFs	%
CE 0204	554	131	23%
CE 0205	436	78	17%
CE 0206	358	13	4%
CSC 0110	783	28	4%
CSC 0111	70	5	5%
CSC 01 13	685	31	4%

CSC 0118	587	131	22%
CSC 0120	726	15	2%
CSC 0215	177	33	17%
CSC 0218	408	78	20%
CSC 0240	226	31	13%
CSC 0251	339	48	14%
CSC X100	101	13	12%
EE 0112	237	56	24%
EE 0201	463	67	14%
EE 0208	217	31	14%
EE 0211	197	42	22%
EE 0212	231	36	16%
EE 0219	248	46	18%

ME 0134	193	20	10%
ME 0211	596	148	25%
ME 0212	710	208	29%
ME 0236	170	9	5%
ME X151	247	40	16%
ME X152	174	10	6%

College of Liberal Arts

<u>Class</u>	<u>Campus</u>	<u>DFs</u>	<u>%</u>
ANT 0201	838	118	15%
ENGLO114	1,870	91	5%
ENGLO125	258	23	9%
ENGLO215	1,264	86	7%
ENGLO218	733	43	6%
GEOG0150	589	109	18%

HIST0101	190	29	15%
HIST0102	134	8	5%
HIST0103	151	24	17%
HIST0204	1,655	242	15%
HIST0315	3,490	481	14%
MU 0101	499	78	15%
MU 0120	736	143	19%
PH-IL0125	770	164	21%
PHIL0230	1,356	223	17%
PHIL0231	1,432	137	10%
POLS0210	2,039	219	11%
PSY 0201	656	75	12%
PSY 0202	1,442	179	13%

SOC 0105	1,038	145	14%
SPC 0125	1,272	108	9%
TH 0210	684	89	14%

College of Science & Math

Class	Campus	DFs	%
ASTRO101	258	47	19%
ASTRO102	195	28	14%
BACT0221	511	73	15%
BACT0222	48	3	5%
BIO 0101	1,159	157	14%
BIO 0128	139	22	15%
BIO 0129	98	5	5%
BIO 0151	318	81	25%
BIO 0152	191	37	19%

BIO 0153	281	53	18%
BIO 0220	827	275	33%
BIO 0302	310	40	13%
BIO 0303	371	120	32%
BIO 0304	81	16	19%
BIO 0325	115	8	7%
BOT 0121	419	92	22%
BOT 0223	170	13	8%
CHEM0106	178	39	22%
CHEM0110	141	33	25%
CHEM0111	347	95	25%
CHEM0121	807	203	25%
CHEM0122	367	77	21%

CHEM0124	714	118	16%
CHEM0125	459	74	16%
CHEM0127	364	74	20%
CHEM0128	333	45	14%
CHEM0129	337	43	13%
CHEM0212	338	45	13%

College of Science & Math continued

Class	Campus	DFs	%
CHEM0216	258	41	16%
CHEM0217	214	19	9%
GEOL0201	802	130	16%
MATH01 12	242	41	17%
MATH01 16	854	246	29%
MATH01 17	714	182	26%

MATH01 18	598	163	27%
MATH01 19	362	92	26%
MATH0120	62	13	21%
MATH0124	517	84	16%
MATH0141	1,065	349	33%
MATH0142	1,071	314	29%
MATH0143	756	158	21%
PHYS0121	405	101	25%
PHYS0122	305	56	19%
PHYS0123	195	36	18%
PHYS0131	1,013	296	29%
PHYS0132	897	174	19%
PHYS0133	678	118	17%

PHYS0211	238	45	19%
PHYS0212	15	3	15%
STAT0130	217	28	13%
STAT0211	1,148	302	27%
STAT0212	367	81	22%
STAT0217	206	46	22%
STAT0218	96	15	15%
STAT0251	418	82	20%
STAT0252	522	96	19%
ZOO 0131	303	99	33%

College of Science & Math continued

Class	Campus	DFs	%
ZOO 0237	206	34	15%
ZOO 0238	45	1	2%

ZOO 0239	46	0	0%
ZOO X240	164	31	16%
ZOO X241	154	26	18%

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For questions regarding the WASC Self Study contact the [WASC Coordinating Office](#)