I. Minutes: Approval of the April 28, 1987 Senate Minutes (attached pp. 2-6).

II. Communications:
   A. Academic Senate Resolutions Awaiting Final Action by President Baker:
      AS-222-86/PPC, CSU Trustee Professorship
      AS-232-86/CC, Concentrations: This resolution was forwarded to the Vice
      President for Academic Affairs (VPAA) on 11/13/86. Per telephone
      inquiry on 4/27/87 to the VPAA, he accepts the stipulation of
      clarification prior to the 1990-91 catalog cycle.
      AS-246-87/SA&FBC, Cheating and Plagiarism
      AS-247-87/SA&FBC, Retention of Exams
   B. Academic Senate Election Results (attached pp. 7-9).
   C. President Baker's Response to AS-231-86 re Centers/Institutes (attached p. 10).
   E. Memo from Young Dated 3/6/87 re Call for Topics for Academic Program
   F. Memo from Vandament Dated 4/17/87 re Results of Program Review Including

III. Reports:
   A. President's Office
   B. Academic Affairs Office
   C. Statewide Senators

IV. Consent Agenda:

V. Business Items:
   A. Catalog Changes for 1988-90: Engineering; Science and Math—Dana, Chair of the
      Curriculum Committee, Second Reading. (Additional material attached as pp. 19-20.)
      (Please bring the curriculum materials mailed to you from the last
      meeting. Additional copies will be available at the meeting.)
   B. Catalog Changes for 1988-90: Remainder of Science and Math; Part of Liberal Arts;
      Library—Dana, Chair of the Curriculum Committee, First Reading. (To be mailed
      under separate cover.) (Please retain these pages for second reading on
      May 19.)
   C. Resolution on Goals and Objectives—French, Chair of the Long-Range Planning
      Committee, Second Reading (attached pp. 21-22).
   D. Resolution on GE&B Area F courses for 1988-90—Lewis, Chair of the General
      Education and Breadth Committee, First Reading (attached p. 23).
   E. Resolution on Enrollment for Units Without Credit—Wright, First Reading (attached
      p. 24).

VI. Discussion:
   Recommendation from the Ad Hoc Committee on Measures of Effectiveness—Wilson, Chair of
   the Ad Hoc Committee (attached pp. 25-36).

VII. Adjournment:
Date: April 27, 1987

To: Lloyd H. Lamouria, Chair
Academic Senate

From: Jane Page, Chair
Academic Senate Elections Committee

Subject: Academic Senate Election Results

The Elections Committee is pleased to announce the results of the recent election for the following positions:

**ACADEMIC SENATORS:**

- **School of Agriculture (3 vacancies + 1 one-year replacement for Ahern):**
  - George J. Hellyer Agricultural Management
  - Robert J. McNeil Crop Science
  - Terry L. Smith Soil Science

- **School of Architecture and Env Design (4 vacancies):**
  - Michael R. Botwin Architectural Engineering
  - Linda C. Dalton City and Regional Planning

- **School of Business (3 vacancies):**
  - Charles T. Andrews Accounting

- **School of Engineering (4 vacancies + 1 one-year replacement for Butler):**
  - Russell M. Cummings Aero Engineering
  - Faysal A. Kolkailah Aero Engineering
  - Dragoslav M. Misić Civil/Env Engineering
  - Safwat M. Moustafa Mechanical Engineering
  - Jack D. Wilson Mechanical Engineering

- **School of Liberal Arts (3 vacancies):**
  - Keith W. Dills Art and Design
  - Patrick C. McKim Social Sciences
  - Harry Sharp, Jr. Speech Communication

- **School of Professional Studies & Education (4 vacancies):**
  - Sarah Lord Home Economics
  - James Murphy L. Industrial Technology
School of Science and Mathematics (6 vacancies)
John F. Goers Chemistry
George M. Lewis Mathematics
Raymond D. Terry Mathematics

Professional Consultative Services (2 vacancies)
Samantha Lutrin Student Life and Activities
Eugene Martinez Counseling and Testing

STATEWIDE ACADEMIC SENATOR 1987-1990
Joseph Weatherby SLA

UNIVERSITY PROFESSIONAL LEAVE COMMITTEE
Louis W. Harper SAGR
David E. Nutter SBUS
no nominations SENG
no nominations SPSE
Caucus Recommendations for One-Year Senate Appointments
When the Election of Senators' Process Failed to Provide Full Membership

School of Agriculture
J. B. Zetzsche, Jr. Agricultural Engineering

School of Architecture & Env Design
Mark Berrio Architectural Engineering

School of Professional Studies & Education
John Stead Industrial Technology

School of Science and Mathematics
Paul Murphy Mathematics
Michael Silvestri Chemistry
This will respond to your memo of March 11 in which you inquired about the status of the proposed policy statement on Guidelines for the Establishment of Research, Educational or Public Service Units. As a review of this issue, you will recall that in the summer of 1986 I forwarded to the Academic Senate a draft of this document with the request that it be reviewed by the Academic Senate. At the same time, these guidelines were likewise being reviewed by other appropriate individuals and groups. The Academic Senate's reactions to this draft were embodied in the Academic Senate Resolution AS-231-86, which was forwarded on October 27. I have just completed review of a revised draft of this proposed policy which incorporates many of the suggestions recommended by the Academic Senate. The final draft is in the process of being prepared in final form for distribution as an administrative bulletin which will supersede the current Administrative Bulletin 72-9. It's my expectation that this administrative bulletin will be distributed in the very near future.
Memorandum

To: Lloyd Lamouria, Chair
   Academic Senate

From: Warren J. Baker
      President

Subject: ACADEMIC SENATE RESOLUTION REGARDING ADMINISTRATION OF AUDIOVISUAL SERVICES

This will acknowledge your memo of April 15 with which you transmitted the resolution adopted by the Academic Senate relative to the proposed transfer of Audiovisual Services to Information Systems. I appreciate the Academic Senate's consideration and action on this issue.
From: Frank Young  
Associate Dean  
Academic Program Improvement

Subject: CALL FOR TOPICS FOR ACADEMIC PROGRAM IMPROVEMENT GRANTS 1988-89

The purpose of this memorandum is to seek your assistance in identifying topics for pilot projects to be funded by Academic Program Improvement in 1988-89. Recommendations received from administrators and the Academic Senate will be incorporated into a list of topics to be circulated for review and ranking in the fall. Final selections will be made by the API Advisory Committee.

As you know, this office provides grants to campuses to launch pilot projects which are often incorporated into the on-going programs of the campus and supported from regularly allocated resources. Past projects have led to the creation of Learning Assistance Centers, assisted in establishing improved advisement systems and practices, stimulated faculty development programs, fostered programs to improve writing skills, encouraged development of instructional technology, and provided help in retaining women and minority students in math, science and engineering. Over 300 major projects directly involving more than 12,000 faculty and 150,000 students have been funded since inception of the program in 1972.

Priority for support in recent years has gone to partnership programs to improve the academic preparation of college-bound students, partnerships between professional/technical fields and the liberal arts, programs to improve undergraduate curriculum and teacher preparation, computer applications across the disciplines, the improvement of instruction in mathematics, and the training of faculty to become more effective advisors of underrepresented minority students majoring in math-based disciplines.

In 1986-87 projects were funded to: internationalize undergraduate education, involve students actively in learning, and improve the effectiveness of baccalaureate programs. Funds for the 1987-88 grants competition will be used in part to sustain initiatives in the areas of internationalizing undergraduate education, multicultural education, undergraduate research and student outcomes assessment.

Your recommendations regarding these as well as new project activity and model programs deserving of consideration for adoption by other campuses are greatly appreciated. Brief accompanying rationales are extremely useful in discussing the recommendations. We would appreciate having your responses by May 30.

FWY/na(0696n)

cc: Linda Bunnell Jones  
Neil Rabitoy
Date: April 17, 1987
To: Presidents
From: William E. Vandament
Provost and Vice Chancellor
Subject: Trustee Approval of Academic Plans

I am pleased to send you the agenda item and the attachments on Academic Planning and Program Review which went to the Board of Trustees at their March 10-11 meeting. The resolution approving the Academic Plans is on pages 19-20 of the agenda item. The academic plans are included as Attachment B, and the attached version incorporates corrections made since the Trustees' March meeting.

Detailed instructions for updating the five-year plans will be issued shortly. We plan to continue on the usual schedule, which will involve submission of early drafts by July 1, 1987 and final drafts as individually scheduled, usually late in October.

Questions should be addressed to Dr. Anthony J. Moye (ATSS 635-5527) or Dr. Sally Loyd Casanova (ATSS 635-5528).

Attachments
California Polytechnic State University, San Luis Obispo

Programs Scheduled for Review, 1985-86

<table>
<thead>
<tr>
<th>School of Liberal Arts:</th>
<th>Review Summaries Received</th>
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<tbody>
<tr>
<td>Applied Art and Design</td>
<td>BS</td>
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<tr>
<td>English</td>
<td>BA/MA</td>
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<td>History</td>
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<td>BS</td>
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<tr>
<td>Speech Communication</td>
<td>BA</td>
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| School of Business:    | BS/MBA                    |
| Business Administration| BS/MBA                    |

Special Review Features:

Using procedures, format and data provided by the Academic Programs staff, academic departments, working with their respective schools, conduct reviews. Reviews involve departmental faculty, students, alumni, department heads, and Deans. Completed reviews are forwarded to the Academic Senate for input, then summarized by the Academic Programs staff for submission to the Board of Trustees.

Summary of Major Findings and Recommendations:

**Applied Art and Design, BS:** Faculty and students attended major conferences, won awards, and made field trips to studios and agencies in San Francisco and Los Angeles. The curriculum has been revised extensively to strengthen the areas of history of art, design, photography, and computer-aided design and graphics. The department needs to improve student recruitment. Studio classes need to be taught by permanent faculty. Courses in printmaking, exhibition design and portfolio preparation need to be reinstated and the department needs to improve its cultural contributions and visibility across the campus and the community.

**English, BA/MA:** The department's major role is teaching literature, language, composition, critical analysis, technical writing and General Education courses as part of the foundation for all students. The department has been unsuccessful in its attempts to lower faculty-student ratios in composition classes or to obtain more resources for developmental writing programs. It needs to work more closely with other departments in developing practical emphasis areas and interdisciplinary programs for its majors. It will also need additional staffing to accommodate increased enrollments in General Education courses.
History, BA: The department foresees a demand to expand the curriculum to incorporate more Third World studies and a course in quantitative methods of historical inquiry. The department continues to seek reduction of class sizes and create a history minor.

Journalism, BS: The department has met its goal of training students "who will find fulfillment as members of society and fill jobs commensurate with their abilities in all areas of mass communication." The department plans to seek additional opportunities for faculty professional development and renewal. It wants also to improve its physical facilities and equipment and strengthen relations with alumni and practicing professional journalists. Accreditation will be sought by 1988-89. The most pressing problems are the need for additional space and the need to attract qualified faculty, particularly in Public Relations.

Political Science, BA: The department's goals for the next five years include implementation of an International Relations minor; expansion of opportunities for integrating applied research into the instructional program and encouraging faculty-student research collaboration; increased cooperation in course integration with the departments of Economics, History, and Social Science; and acquisition of additional microcomputers for instructional and professional purposes. Areas of concern to the department include increasing numbers of students in upper-division courses, inadequate financial support for purchase of microcomputers for instruction, and excessive time demanded of faculty for university, senate and school committee work.

Social Science, BS: The department wants to provide a program balanced between service courses and courses for majors; to develop better cooperation of faculty and students in the major, concentration, and career planning; to encourage non-classroom social and scholarly interactions of students and faculty; and to encourage faculty professional growth. Areas for improvement include expansion of General Education to equal two full years of the baccalaureate requirements and elimination of double counting in Area D. The department needs two additional tenure-track faculty and an increased allocation of freshmen to maintain the number of majors between 310 and 320. The most important problem faced by the department is the excessive teaching load carried by its faculty.

Speech Communication, BA: Departmental goals are being met through course and program offerings, interactive teaching, applications of theory to career orientations, and interaction of faculty and students in curricular-related activities. The department needs to expand concern for emerging areas such as teaching non-native speakers of English and examining the relationship of Speech Communication to mass communications. It also needs more support for faculty development. The most important problem facing the department is attracting and keeping a quality student body and faculty in a university which does not emphasize speech communication.
Business Administration, BS/MBA: The departments of Accounting, Business Administration, and Management were reviewed. The Accounting department had met some goals; it had hired four new doctorally qualified faculty, but had lost two during the same period. It had a significant increase in research and publication among the faculty. The department will continue efforts to obtain accreditation and recruit qualified faculty, and plans curricular revisions and greater use of microcomputers. The department needs greater uniformity in the rigor of course sections and grading standards, increased research and publication, and more extensive faculty recruiting. The most pressing problem is inadequate clerical, operating, and travel support, coupled with inadequate office, classroom and laboratory facilities.

The Business Administration department was reviewed for accreditation and has increased its external financial support. The department needs to encourage faculty to strive for teaching excellence, increase professional development, particularly in the area of research leading to publication, improve curricula in terms of their academic currency and relevance to the needs of the business community, increase the number of full-time equivalent faculty, and attain accreditation of the MBA program. The department needs more faculty offices, faculty positions, and greater resources for travel, research, microcomputers, and graduate assistants.

The Management department has gained professional recognition as a result of research publications and working papers by department members. Discretionary funds have been raised, but recruiting MIS faculty remains difficult. The department needs to continue to improve the quality of curriculum and instruction, increase professional and community recognition; increase professional activity among faculty; obtain facilities, faculty, and operating funds to support improved instructional services; and obtain and maintain graduate accreditation. The most critical problems are inadequate faculty allocations, insufficient travel and operating funds, difficulty in recruiting qualified faculty, lack of faculty office space and faculty computing facilities, and insufficient assigned time for administrative purposes.

Economics, BS: The department, which has principally played a service role for other majors, wants to increase the number of majors; develop additional courses for the MBA program, and encourage more research and publication among the faculty while retaining its primary focus on excellent teaching. The most important problem facing the department is obtaining the reclassification of its courses from C2 (lecture-discussion) to C4 (discussion).
ACADEMIC PLAN
1987-88 through 1992-93
California Polytechnic State University, San Luis Obispo
(continued)

<table>
<thead>
<tr>
<th>Existing Schools/Divisions and Degree Programs Offered</th>
<th>Proposed Degree Programs (Fall Term)</th>
<th>Schedule for Review of Existing Programs</th>
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<tbody>
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<td><strong>School of Liberal Arts</strong></td>
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</table>

| **School of Engineering**                               |                                      | 1987-88                                  |
| Aeronautical Engineering                                | BS                                   | MS 1987                                 |
| Civil Engineering                                       | BS                                   |                                          |
| Civil and Environmental Engineering                     | BS                                   | MS 1987                                 |
| Computer Engineering                                    | BS-MS                                | BS 1987                                 |
| Computer Science                                        | BS                                   |                                          |
| Electrical Engineering                                  | BS                                   |                                          |
| Electronic Engineering                                  | BS                                   |                                          |
| Electronics and Engineering                             | BS                                   |                                          |
| Electrical Engineering                                  | MEngr*                               | MS 1987                                 |
| Engineering Science                                     | BS                                   |                                          |
| Engineering Technology                                  | BS                                   |                                          |
| Environmental Engineering                               | BS                                   |                                          |
| Industrial Engineering                                  | BS                                   |                                          |
| Mechanical Engineering                                  | BS                                   |                                          |
| Metallurgical Engineering                               | BS                                   |                                          |

Note: Underlined programs are nationally accredited subject areas.

*The University plans to convert the MEngr to an MS in Engineering with Options.
## ACADEMIC PLAN
1987-88 through 1992-93
California Polytechnic State University, San Luis Obispo
(continued)

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<tr>
<td>Counseling</td>
<td>MS</td>
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<tr>
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<tr>
<td>Graphic Communication</td>
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<td>Home Economics</td>
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<tr>
<td>Human Development</td>
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<tr>
<td>Industrial and Technical Studies</td>
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<td>Industrial Technology</td>
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<td>Liberal Studies</td>
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<td>Physical Education</td>
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<td>School of Science and Mathematics</td>
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<td>Biochemistry</td>
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<tr>
<td>Statistics</td>
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Note: Underlined programs are nationally accredited subject areas.
Memorandum

To: James Harris, Head
EE/EL Department

From: Charles H. Dana, Chair
Academic Senate Curriculum Committee

Date: March 31, 1987

Subject: CURRICULUM COMMITTEE COMMENTS ON YOUR 88-90 CATALOG PROPOSALS

The Curriculum Committee has begun its review of your department's proposals for the 1988-90 catalog. Our comments and questions follow. They range from the significant to the trivial, but all are aimed at improving your package. Some comments involve decisions that will be made by the Academic Affairs office and are included here only as a warning to a possible problem later. If you have any questions, please call me at x1331. You can send me mail via the Computer Science Department.

To meet our deadlines we will need your response no later than April 14.

Action on the curriculum as a whole:

We have approved the curriculum without consideration of the total number of units or the number of free electives. We are consulting with the administration on the status of the Academic Senate resolution on free electives and will delay final action until we get clarification on whether or not it will be approved (and when it would take effect) or until we must move the school's package to the full Senate.

Comments that concern more than one course:

1. We found the staffing justifications on several courses to be inadequate. These are noted below. The justification should address where the WTU's needed to teach the course will come from, not merely the fact that an existing professor could teach the course. If existing staff teach the course, they presumably will not be available to teach some of their current courses - which will have to be covered by new staff. We point this out so that you can improve your package's chances in later stages of the review process. This committee WILL NOT REJECT a course based on inadequate staffing justification.

2. While the committee expressed sympathy for the problem you are trying to solve with the junior year "block scheduling" corequisites, we also felt that your solution was unenforceable. It was noted that other departments have similar problems and the campuswide average of units taken per quarter is falling. It was suggested that this may be a symptom of asking too much from our students in too short a time (perhaps we are trying to compete with graduate schools, one person said) and your solution was really taking a problem of the faculty's making and putting the solution on the backs of the students. It was also suggested that the good, conscientious students will be the ones who suffer: they will sign up and struggle through it while the less diligent ones will just drop a course and take it the next time around anyway - exactly what you are trying to avoid. We also considered if we were reacting to the massiveness of the proposal and we concluded that we were not, that the committee really wants an academic justification for the corequisites that you want in the catalog. You will need to either provide an explanation of the academic connections between all these courses or withdraw the changes from the package (or these will likely go to the senate as disapproved).
3. In the move from 3 to 4 unit graduate courses, the committee was concerned about a couple of matters. First, there is a 33.3% increase in the number of units in a course without ANY change to the description of the content of the course. We will need to see how the material covered in the courses will change before we can approve the changes. Before and after expanded course outlines could suffice if they are of sufficient detail. The second concern involved the current status of the MS proposal. It was described to us as being in a critical moment of the approval process at the Chancellor's office and, while the general idea of increasing the breadth of coverage may be good, it is right now inappropriate to change anything involved in the Master's degree. The idea is to get the MSEE approved and in place before we start making any changes to it. The committee strongly recommends you consider this.

Comments on Specific New Courses:

EL 418: The committee generally accepted the course, but wants to see more explanation of the difference with EL 403 before final approval.

The course description is longer than the limit of 40 words. You will need to cut it down.

There seems to be a contradiction in saying "the student demand for courses is very high" and the course being offered only once a year. Could you clear this up for us?

The Staffing Justification is inadequate.

Comments on Specific Course Changes:

EE 201: The committee found the justification for the level change inadequate. It was pointed out that in many service departments it is quite common for a 200 level course to be taken by students in their junior or even senior years. The committee wants an academic justification for the change that deals with the material in the course.

EE 261: The committee found the justification for the level change inadequate. It was pointed out that in many service departments it is quite common for a 200 level course to be taken by students in their junior or even senior years. The committee wants an academic justification for the change that deals with the material in the course.

Summary of items not yet approved:

EL 418

Changes to

EL 201, 261, 301, 302, 303, 325, 341, 342, 365, 463, 511, 513, 514, 418, 520, 525, 527, 521, 524, 526, 529, 530,

free electives

Summary of items THAT HAVE BEEN approved:

Changes to EL 208, 219, 248, 447; Deletion of EL 207

curriculum displays and evaluation page (except for the number of free electives)

Special final note

In a final discussion before adjournment, your innovative idea of using the existing GE&B courses to create Liberal Arts tracks for EE/EL students was pointed out and there was general agreement that this was an excellent idea and you should be commended on it. Consider this that commendation.
Resolution on
Developing Goals for Cal Poly in the 1990's

Background

Over the past several years there has been increasing interest at Cal Poly in the question of where the university is going in the next ten to twelve years. Numerous actions and activities have been undertaken to help set a direction for the university. In 1983 the Mission Statement for the university was prepared and adopted. In April 1985 the Academic Senate unanimously passed a resolution calling for the university to undertake a strategic planning process, which would identify the opportunities and constraints facing the university in the next decade. In an October 1985 meeting with the entire faculty President Baker addressed the topic of Cal Poly and California in the next decade. In May 1986 the Academic Senate passed a resolution recommending that future enrollment planning be subject to the availability of adequate staff and facilities and that faculty be fully involved in all enrollment planning activities. During this period various administrative groups have been active in preparing plans for specific areas, most notably in the areas of information systems (Campus Information Resources Plan) and buildings and facilities (Campus Master Plan). The President's cabinet has been considering various long range planning issues through its committee structure. Most recently the Budget Committee identified a need to link long range planning with incremental budget decisions and with program evaluation. Clearly, planning is being done for the university and some areas show more planning than others.

Cal Poly's activities have not been taking place in a vacuum. At the state level the Master Plan for Higher Education in California is examining the appropriate roles of the University of California, the California State University and the community college system. Several other institutions in the CSU are involved in various long range planning efforts, most notably Cal State Fullerton, Cal State Fresno and Sacramento State. The statewide Academic Senate and the Chancellor's Office have also been considering a number of issues in this arena.
Resolution on 
Developing Goals for Cal Poly in the 1990's

Whereas, Planning for likely changes in its social, demographic, technologic, and institutional environment provides Cal Poly a mechanism to adapt to these changes and shape its own future;

Whereas, A shared vision of the ways in which the university should develop in the future would help to guide day-to-day decision making and provide greater consistency among individual decisions;

Whereas, Cal Poly's Mission Statement provides guidance, but lacks the specificity to serve as a policy guide for decision making;

Whereas, the University Academic Planning Committee is the body charged by CAM with recommending goals for the university and the most orderly and effective ways in which to achieve those goals; therefore be it

Resolved; That the University Academic Planning Committee be instructed to develop a set of Goals and Objectives which more precisely define the mission of the university; and be it further

Resolved; During the development of these Goals and Objectives the views of relevant University, Academic Senate and ASI committees as well as the Dean's Council, the President's Cabinet and relevant administrators should be solicited and considered by the Academic Planning Committee; and be it further

Resolved; That these goals should be specific enough to provide a framework for individual decisions and should address important issues related to Enrollment, Curriculum, Land and Facilities, and Faculty and Staff; and be it further

Resolved; That the committee should produce such a set of Goals and Objectives by the end of Winter Quarter 1988 to be reviewed and discussed by the Academic Senate and other appropriate campus bodies during the Spring of 1988; be it further

Resolved; That the magnitude and importance of this task warrants that members of this committee be given reduced workloads in Fall 1987 and Winter 1988 which allow them to give this task adequate attention.
Background statement: Academic Senate resolutions AS-188-85/GE&B, AS-189-86/GE&B, and AS-211-86/GE&B each contain Academic Senate-approved courses for GE&B Area F. In President Baker’s July 23, 1986 response to the above resolutions, he placed a hold on all of the recommended and future courses for Area F. This hold was to remain in effect pending Academic Senate clarification of guidelines for Area F courses, specifically that many of these courses did not appear to adequately cover both the “Applications” and “Implications” of Technology as required in the Knowledge and Skills statements.

Such clarification was requested to permit inclusion of new Area F courses in the 1988-90 catalog. As a result of subsequent meetings between the GE&B Area F Subcommittee and the Associate Vice President for Academic Affairs, it appears feasible to provide administrative approval for inclusion of the already-recommended courses for inclusion in the 1988-90 catalog only while the Academic Senate works to clarify the Area F guidelines for approval of additional courses.

AS-——87/___

RESOLUTION ON GENERAL EDUCATION AND BREADTH AREA F COURSES FOR 1988-90

WHEREAS, Selected General Education and Breadth (GE&B) courses were adopted by the Academic Senate in 1986; and

WHEREAS, A hold was placed on these Area F courses by President Baker pending clarification of issues centering around Area F; and

WHEREAS, Subsequent discussion between the GE&B Area F Subcommittee and the Associate Vice President for Academic Affairs indicates the feasibility of proceeding with a two-stage approach; therefore, be it

RESOLVED: That the GE&B Committee continue to work towards clarification of Area F guidelines to ensure that all courses clearly meet all goals as described in the Knowledge and Skills statements; and be it further

RESOLVED: That the following Area F courses approved by the Academic Senate in 1986 be included in the 1988-90 catalog only pending such clarification of the guidelines:

From AS-188-85
DPT 230 General Dairy Manufacturing
SS 121 Introductory Soil Science

From AS-189-86
NRM 101 Natural Resources of America
NRM 210 Environmental Management

From AS-211-86
AE 121 Agricultural Mechanics
CONS 120 Fisheries and Wildlife Management
FOR 201 Forest Resources
HE 331 Household Equipment

Proposed By:
General Education and Breadth Committee
May 5, 1987
Background statement: The following language appears in the 1986-88 catalog: “Although only six units of credit may be applied to the degree requirements, students must enroll in ED 599 Thesis/Project for every quarter in which they are receiving advisement.” (p. 283) Although only 9 units of credit may be applied to the degree requirements students must enroll in HE 599 Thesis for every quarter in which they are receiving advisement.” (p.303) Finally, in the catalog description of PE 599 one finds, "Only 6 units of credit may be applied to degree requirements. Students must enroll every quarter in which advisement is received." (p. 558)

AS—87/—

RESOLUTION ON ENROLLMENT FOR UNITS WITHOUT CREDIT

WHEREAS, The policy that students be required to register and pay for units which they cannot receive is a financial burden not justified by academic considerations; therefore, be it

RESOLVED: That students not be required to enroll for Thesis or Thesis/Project during quarters for which they are not receiving units of credit for Thesis of Thesis/Project; and be it further

RESOLVED: That a policy that students cannot be required to register and pay for units which they cannot receive become effective now, rather than after another catalog cycle.

Proposed By:
Marshall Wright
May 5, 1987
To: Lloyd Lamouria, Chair  
Academic Senate  

From: The Ad Hoc Committee on Measures of Effectiveness of Instruction  

Members  
Mark Berrio, Architectural Engineering  
Don Hartig, Mathematics  
Clay Little, Agricultural Business Management  
Norman Murphy, Counseling Center  
Michael Orth, English  
Thomas Ruehr, Soil Science  
Jack Wilson (Chair), Mechanical Engineering

Subject: Report

Here is our report. We spent much time deliberating what constituted quality instruction, however, we did not reach any definitive conclusions. Rather, in the preamble we have discussed quality instruction, some of its attributes and factors which enhance it.

Our recommendations on how to measure effectiveness of instruction are found in the document titled Measures for the Evaluation of Instruction. Some of these measures address the effectiveness of instruction indirectly by measuring program effectiveness.

As an attachment to this report you will find Quality Instruction: A Model. This resulted from some of our discussions and is included only as a possible resource for further study.

All of the members of this committee were steadfast in their initial commitment to serve on the committee and it was truly a pleasure to work with them. Don Hartig replaced Dave Hafemeister who as you remember went on a sabbatical beginning winter quarter.
The American system of higher education is of essential importance for this nation's continuing economic development, cultural vitality and general prosperity. Probably no other nation of the world places more emphasis on the importance of higher education for its citizens. There are 2100 Baccalaureate-granting colleges and universities in the U.S. plus a large number of junior colleges. A total of 12 million students are enrolled in these institutions of higher learning.

Yet, undergraduate education is in trouble. The recent report on undergraduate education by the Carnegie Foundation for the Advancement of Teaching states that the undergraduate college is a "troubled institution." The report's criticisms of undergraduate education include: (1) too narrow a focus in career oriented education, (2) too much emphasis upon graduate and professional education, (3) a lack of goals by institutions with the result that many are trying to be all things to all people, (4) a lack of effort by college administrators to promote quality undergraduate instruction by placing more emphasis on research, publication and grantsmanship, (5) too little emphasis on lower division undergraduate courses as exemplified by large lecture sections that provide little opportunity to interact with the instructor, and instruction, in many cases, by graduate students who too often care little about the students and subject matter, and (7) a lack of interest by undergraduate instructors in enhancing education outside the classroom "to nurture not only the student's minds but their bodies and spirits as well."
The current, and long-standing, practice of measuring effectiveness and quality in undergraduate education by library volumes per student, percent of PhD's on the faculty, exam scores necessary to gain admission, budget expenditures per full-time equivalent student, the research dollars per full-time faculty and the size of the endowment has been called into question. Governors and state legislatures nationwide are taking a long hard look at undergraduate education in their states in order to determine if the tax dollars they are spending provide the quality in undergraduate education that they expect.

It is in the context of these observations that this committee has worked to attempt to discover what constitutes quality instruction and to develop a list of recommendations on how to measure the effectiveness of instruction. To be sure, instruction is only part of the total education that occurs at a university. But it is the major part, for it is in the classroom where the instructor and the students spend the major part of their time interacting.

We believe Cal Poly is not guilty of most of the deficiencies mentioned in the Carnegie report. The faculty at Cal Poly generally work at being teachers rather than viewing teaching as an adjunct to research and other scholarly activities. Unlike many universities, the student comes first at Cal Poly. Yet, there will always be a need to improve instructional skills. For example, there appears to be few if any programs at the department or school level designed to assist faculty with little or no teaching experience on how to be an effective instructor. Programs such as this however do not come cheap and would require resources additional to what is now available.
Teaching is a creative function. It is as much or more an art than it is a science. To be an effective teacher one must be dedicated to teaching. While this may sound trite, it is not. All of the education in the world on how to teach will not compensate for the lack of dedication on the part of an instructor. On the other hand, there is much to be learned from pedagogy and its importance should not be undervalued.

Effective instructors do not all fit the same mold. There are substantial differences in the personalities and teaching "styles" of instructors. Effective instruction, and there is much effective instruction at Cal Poly, however, includes some of the following characteristics: (1) enthusiasm, (2) expertise in the subject area, (3) good pedagogy, (4) willingness to seek better ways to teach, (5) ability to communicate (includes listening), (6) high expectations of the students and consequently high standards of performance, and (7) ability to inspire students and convince them that learning is their personal responsibility. And finally, since all that a person should know to be an effective citizen cannot be learned in the short space of four or five years, but is an ever continuing process, perhaps the ultimate goal of effective instruction is to develop enough confidence in the students so that they realize they can learn on their own, and will want to do so.
The learning process requires student effort. Perhaps the greatest attribute students can bring to the learning situation is their own motivation or desire to learn. Other important attributes of a good student are intellect, creativity, responsibility, the desire to continue learning after graduation, a high level of aspiration and last but not least a high level of maturity. Cal Poly is blessed with many fine students of high intellect. Most do very well, but some struggle with their studies. There are a variety of reasons for a lack of success in the classroom. Included are: (1) lack of motivation, (2) poor preparation for college level work, (3) personal problems that interfere with ability, and (4) learning disabilities.

The faculty is generally not aware of those students who are suffering from learning disabilities or those students who are experiencing some kind of personal difficulty. In general, faculty are probably not aware of the tremendous extra effort required by those students who come to the university inadequately prepared to do college level work. This lack of awareness is not due to a lack of concern, but is generally due to the fact that most faculty are not trained to spot these kinds of problems in students, and the heavy teaching loads at Cal Poly generally stretch faculty to the limit of their powers.
Teaching does not occur in a vacuum. The teaching environment plays an important role in determining the effectiveness of instruction. Cal Poly seems to be plagued with more than its share of poor classrooms. Totally inadequate ventilation exists in too many classrooms, while a few are simply not amenable to good instruction at all. Inadequate faculty offices, although declining in number, still remain a serious impediment to good instruction in far too many cases.

Other important environmental supports that enhance effective instruction include: (1) the library, (2) audiovisual services, (3) food services, (4) the physical plant, (5) student services, (6) the University Union, (7) computer services, (8) custodial services, and last but not least (9) the administration.

Sound pedagogy requires still more. Other factors included in education are: (1) feedback to students in a timely fashion, (2) innovation in instruction, (3) problem solving that tests students cumulative skills, (4) multimedia instruction, (5) involvement by the students in their learning, (5) experiential approaches, (7) the value of individual effort, and (8) the hierarchy of intellectual skills.

Finally, a university must have a philosophical commitment to quality instruction. It should be strongly stated and well understood by faculty, students and staff. Its goals, which also must be well defined, should be achievable within the constraints of funding. Then, and only then, can these goals be turned into objectives that can be measured and in turn measure the effectiveness of our program(s).
Measures for the Evaluation of Instruction

Our committee was given the task of determining the best means of evaluating how effectively we provide instruction at Cal Poly. Our recommendations are contained in this report. Although we discussed the broader problem of evaluating the total educational experience, because our charge was to study measures of the effectiveness of instruction our report focuses specifically on this narrower issue. However, in the course of our study, which began last fall, it often seemed necessary to discuss methods that could be used to improve the quality of instruction as well as measuring it. Some of our recommendations address this issue.

We have agreed about four areas where we can offer recommendations for specific action pertaining to the evaluation and improvement of instruction. These areas are:

1. Course Examinations.
2. Standardized Comprehensive Examinations.
4. Peer and Student Evaluations.

Therefore, we have divided our report to offer our findings and recommendations in these areas.

1. Course Evaluations.

We examine our students for mastery of course material as stated in the course objectives in many ways. Included among the methods of evaluation are:

1) tests
2) term papers,
3) compositions,
4) homework,
5) oral presentations,
6) projects,
7) laboratory reports,
8) critiques of student work.

Instructors spend a significant amount of their time formulating questions, problems, themes, individual and class projects, and lab experiments for their students. Considerable effort is required to evaluate these assignments and to communicate the results to the students in a timely and effective manner. Additional time goes into the preparation and evaluation of design projects and senior projects. All of these instruments can be used also as part of a system to measure the effectiveness of our instruction.

Therefore we recommend:

that as one means of measuring the effectiveness of our instruction, this university organize regular and systematic evaluation by an appropriate
Let it be clearly understood that such an evaluation would have as its sole purpose the improvement of the quality of our instruction and of our evaluation procedures. It should not in any way be construed as a watchdog mechanism which might stifle faculty experimentation and innovation in this crucial part of the student's academic experience.

Faculty are interested in improving their instructional techniques to enhance the learning process among their students. If such an evaluation were undertaken, we believe that many faculty would welcome a sharing of ideas about how to improve their ability to select, present, and state the problems and questions they propose to their students as well as how to better quantify their subjective judgments of student progress. Such improvement would help us more effectively determine if students have mastered the course material.

To make this process part of a system to improve as well as measure the effectiveness of instruction, we recommend:

1) a course or courses for instructors in university level instruction to include information on writing examinations and problems and other means to improve their ability to evaluate their courses and students' progress.

2) a series of summer colloquia dealing with these subjects, and perhaps featuring guest speakers and experts on test development, as well as workshops and sessions for faculty to present and share their successful ideas on instruction.

Further, we believe that in many circumstances common course examinations can be a valuable means to measure how effective our instruction has been. Common finals are used in some departments where multiple sections of a course are taught each quarter and where principles covered in that course are necessary for subsequent courses. The primary objective of such an examination is to determine whether course objectives are being met. A sampling of such common examinations could provide significant information about how effectively the information and concepts in such core courses is being learned.

Therefore we recommend all departments consider the development and use of course examinations in central courses. We believe common finals may not be suitable to all courses or departments, and the ultimate decision to utilize them should be left to the departments. We recommend such finals only for program measurement and improvement, not as a device to compare instructors competitively. Moreover, developing and administering common course examinations would require resources in addition to those now available, and should not be expected as an additional duty without adequate additional resources.
2. Standardized Comprehensive Examinations

By Discipline

Student performance on a comprehensive examination may measure the effectiveness of a program. We recommend that faculty be encouraged to consider adopting standardized comprehensive examinations appropriate to their programs, especially where such an examination already exists. The Engineer-in-Training Examination is such a comprehensive measure and is taken by the overwhelming majority of engineering students just prior to their graduation from Cal Poly. It provides a reasonable measure of the effectiveness of the engineering programs at Cal Poly.

We recommend that:

1) for each department or program for which a standardized comprehensive examination does not exist, such an examination be developed by the faculty of that department or program, giving particular attention to the objectives of the course and the validity and reliability of the measures developed,

2) the university provide the considerable resources that will be required for this task.

The comprehensive examination in the discipline should be constructed to measure not only the immediate material taught in the courses of the department or program, but also whatever factors of depth and breadth the general discipline requires.

In General Education

The results of the ACT COMP or some similar evaluation instrument can help judge the extent to which students are acquiring the knowledge and skills that characterize broad-based learning and can help focus what outcomes of general education we can expect. In addition, they can be effective aids in shaping the curriculum in general education.

These evaluative instruments do not come cheap; they consume faculty and support staff time and energy, and would require enrichment of the present budget to administer and evaluate. We have looked at samples of such tests and considered the costs and implications of using them. We believe they offer a powerful tool to evaluate and improve our programs, and therefore we recommend:

1) that some type of comprehensive examination be given annually to a sample of Cal Poly students and the results widely shared throughout the campus community for planning purposes. (In order to determine what value has been added to our students' abilities, this examination might be given both to first year students and to graduating seniors.)

2) that the necessary resources to conduct these examinations and decide upon and implement appropriate responses to the results be supplied by the university.
3. Surveys of Graduates and Employers

Surveys of graduates one, five, or ten (or more) years following graduation can be a valuable source of information about the effectiveness of the education they received and the areas they see that need improvement. A similar survey should be made of major employers of Cal Poly graduates.

We recommend:

1) that such surveys be carried out as a department function,
2) that the necessary resources to prepare and administer both surveys be supplied by the university.

4. Peer and Student Evaluation

Peer Evaluation

Peer evaluation of instructors is presently included in the bargaining agreement but apparently all departments do not practice it. In some of the departments which do carry it out, its effectiveness may be questionable due to constraints of resources and time placed on the evaluating faculty. Therefore we believe that the university must provide proper support in released time, clerical assistance, and expert advice before this source of information on the effectiveness of instruction can be used. Special attention to course objectives and to the reliability and validity of course examinations should be a prominent feature of this evaluation. Peer evaluation could, if properly done, be a valuable means both of evaluating programs and of assisting the faculty being evaluated, especially young or new faculty with little or no teaching experience.

We recommend that the instrument used for peer evaluation include:

1) a quantifiable element,
2) a significant percentage that is common across the school or university,
3) some means for correlating the results with those obtained from student evaluations, and further,
4) that released time for the evaluating faculty be provided to enable them to do a professional job of evaluation.

Student Evaluation

Student evaluation of instruction and instructors is presently an integral part of RPT decision making. The evaluation form is not standard across the campus nor is it obvious that it should be. However, some departments may be using evaluation instruments that are not as sound as they could be. This may mean that the resulting evaluation is not as helpful to the instructor (and where it is used for RPT purposes, to the evaluating faculty) as it could and should be, and also it may represent an indefensible document in case of a grievance or a law suit. In any case, we believe student evaluation of faculty should be
organized in a way that is as nonthreatening to faculty and students as is possible. A focus on course objectives and the reliability and validity of course examinations should be a prominent feature of this evaluation.

Therefore we recommend that the evaluation instrument include:

1) a quantifiable element,

2) a significant percentage that is common across the school or university,

3) some means of evaluating the internal consistency and responsibility of the respondents,

4) some means of correlating it with the peer evaluation.

Conclusion

We believe Cal Poly can develop a plan to measure how effectively we teach our students. The four categories of assessment we outline in this report can form the basis for an acceptable plan. However, we want to emphasize three cautions which should be exercised in implementing any plan.

1) The specific measures and procedures developed in each category should be studied carefully to assure the most valid, reliable, and effective instruments possible. Consideration of statistical and legal issues will require technical study, and implementation will require real political leadership.

2) The university or system must provide significant additional resources in faculty and staff time if effective measures are to be developed and implemented. Instruction can be effectively evaluated, but full support beyond present levels will be necessary.

3) Our report has focused on measures of the effectiveness of instruction. We recognize that the real issue is the effectiveness of the entire education we provide at Cal Poly. Many other measures would need to be considered to assess education, for it includes and is influenced by many factors in addition to formal instruction. We recommend that a broader study be made, considering the factors outlined on the introduction to this report.
Quality of Instruction: A Model

**Instructor Qualities**
- Expertise
- Creativity
- Experience
- Standards
- Instructional Techniques
- Commitment
- Collegial Approach
- Curriculum Development
- Recognizing of Individual Differences

**Student Qualities**
- Intellect
- Creativity
- Level of Aspiration
- Motivation
- Responsibility
- Desire to learn lifelong
- Cooperative Approach
- Personal Accountability
- Broad Interests/Activities

**Educational Medium**
- Feedback
- Innovation
- Problem Solving
- Value Orientation
- Multiple Instructional Strategies
- Collateral Imputation
- Achievement Orientation
- Experiential Approaches
- Value of Individual Effort
- Hierarchy of Intellectual Skills

**Environmental/Professional Supports**
- Library
- Audio Visual
- Food Services
- Administration
- Physical Plant
- Student Services
- University Police
- Student Services
- Career Services

**Philosophical Commitments**
- Excellence as a Goal
- Integration of Learning
- Participatory Involvement
- Measurable Mission Objectives
- Cal Poly as a Center for Learning
Resolution Opposition to Block Scheduling

WHEREAS:
The Engineering Council represents the views and concerns of the students of the School of Engineering.

WHEREAS:
The EE/EL department has proposed a block scheduling curriculum change which would make EE/EL classes co-requisite in the junior year.

WHEREAS:
This would require students to take 12-14 units per quarter in the EE/EL major.

WHEREAS:
If a student could not complete a particular course in the block scheduling, it may cause up to a one-year delay before the student can get back into the sequence.

WHEREAS:
There is no guaranteed space allocation for every student wishing to begin a block sequence.

WHEREAS:
Block scheduling discourages involvement in extracurricular activities, discourages participation in the Co-op program during the junior year, and discourages students who wish to work ahead in the sequence.

WHEREAS:
Block scheduling discriminates against students who must support themselves and therefore cannot take a full load of classes.

THEREFORE
BE IT RESOLVED:
That the Engineering Council considers the block schedule curriculum inappropriate and not in the best interest of the students in the EE/EL department.

THEREFORE BE IT FURTHER RESOLVED:
The Engineering Council recommends the Academic Senate and the University President to reject the block scheduling proposal submitted by the EE/EL department.

Certified as true and correct copy on this 12th day of MAY, 1987

ADOPTED at the regular meeting of the Engineering Council by unanimous (19-0-2) vote on MAY 6, 1987.

Vice Chair, Engineering Council
Chair, Engineering Council
TO: Chair, Academic Senate  
Academic Curriculum Committee  
FROM: Todd A. Reinart  
Chair, Engineering Student Council  
DATE: 5/12/87  
SUBJECT: Student opposition of Block Scheduling for the EE/EL program

A. Students Reasons for Opposition
   1. There is no guarantee all classes will be provided through CAR or adding classes.
   2. Failure of any one class would cause a delay of at least two quarters.
   3. For any reason, falling behind into the second sequence would require attendance at Summer session.
   4. Outside involvement in University activities is discouraged.
   5. The program punishes not only those who fall behind, but those who wish to work ahead.
   6. For those on Academic Probation, a reduced work load could not be implemented.
   7. Co-op is discouraged by this program.

B. Discussion of Reasons for Opposition
   1. Jim Harris claims there are enough seats for everyone. However, at present students get blocked out of classes due to overenrollment in the program. In the last three years alone over 160 students were overenrolled in the EE/EL department. This cannot be altered without altering the state formula. This has not been done, thus the program cannot be guaranteed to work. Also, 25% of the students fail at least one class. This creates a back log of students which in turn eliminates the guarantee of seats being provided to all.

   2. Failing a class in one sequence indicates a lack of fundamentals in that area. All the classes in the block are not interrelant on the same fundamentals. Whereas now the student may continue in those areas of confidence and repeat those areas of weakness and therefore progress in the program, this new program would cause across-the-board delay of at least two qtrs.
3. Repeating a class causes starting in the second sequence which is Wtr.-Spg-Su. This means forced attendance of summer session or a one year delay (since the senior sequence begins in the fall). Many students cannot attend Summer session for financial reasons. This is therefore a discriminatory punishment.

4. Twelve forced units requires 18 hrs./wk. of class and lab attendance. The average time to study, do homework, and finish and write-up labs is approximately 48 hrs./wk (for A&B students--ref. Engineering Magazine Survey #1). This is 66 hrs/wk alone under these circumstances. 60% of students also work to maintain financial support. The average hrs/wk of work is 12. This is 78 hrs./wk of necessary time for Harris' successful student. Little time is left for outside activities. Thus, this program cranks out computers and not leaders.

5. There is no provision for those who wish to work ahead (say take 307 and 308 at the same time). Therefore, not only are students punished as stated above, but also for being better.

6. The EE/EL academic disqualification policy is now more strict than the overall SENG policy. This is called intrusive advising by Jim Harris. Advising may include a reduced class load. This program would eliminate this intrusive advising and therefore eliminate the purpose of the stricter disqualification policy. The student pays the price for the department's Catch 22.

7. Co-Op requires two quarters. This is discouraged because falling back into the second sequence due to Co-Op means that in case of failure, a one year delay is caused. Thus, students will be discouraged from Co-Op due to impending graduation delays. Also note that Co-Ops are also sources of revenue for students. Discouraging their source of revenue is discriminatory too.

C. Discussion of Jim Harris' memo to the Senate

1. Jim Harris' memo points out that a similar program existed in the 50's and 60's. Cal Poly was a semester based system indicating that such a program required less forced work load and therefore less stress and therefore encouraged success. Implementing the block program may have the opposite effect. Also it is interesting to note that they must have eliminated the old program for good reasons--ones worth investigating.
2. Educational quality is an issue. However, why is Cal Poly's up for question? At present the EE program has a 100% hire rate of their graduates and the EL grads have a 98% hire rate. (Source: Placement center) Industry is satisfied with our program and its graduates, why aren't our current administrators?

3. Only 20% of the students now registered satisfy this program. The reasons not mentioned by Harris are class availability, outside factors (such as working or leadership offices), and class failure. Obviously, this statistic should work against implementing block scheduling, not for it.

4. There has been no reasonable transition process submitted. With the backlog of students and overenrollment, it could take many years (if ever) before the program worked.

5. The average load of the student is 14 units, but these include G.E. classes. Requiring students to go full time is also against any University policy!

6. If the students are at the top as far as GPA and performance, why change the program?

7. Students may be taking the same classes, but not the same instructors. Thus the equality argument is invalid since grade allocations differ widely between instructors.

8. America is the leading source of new technology and we are not in competition in this respect. Where we are deficient is in financial management, labor resources (More expensive Labor), and manufacturing processes. None of these can be solved by such a program.

9. Jim Harris states, "If the department finds that the students cannot handle the load imposed..., then we as faculty will adjust the junior load..." Yet, isn't this self-destructive--teaching less=less quality=less quantity or quantity without substance. How many students will change schools or be disqualified or be delayed because they are guinea pigs?

10. If students coming into the program are the best, they should be given every chance to prove it as the system is now, and not force them to perform like computers.

11. Jim Harris' second to last paragraph contains all the fallacies and problems discussed in section A of this memo.
D. Conclusion

This program is opposed by a majority of the EE/EL students, by several faculty, by alumni that have been informed of this, and by students in other engineering majors. This is evident by the 35 minute discussion at the engineering council meeting of 5/6/87. During this meeting all the enclosed concerns were brought out and discussed. This lead to the resolution in which the students motioned to oppose the block scheduling program and present this opposition to the Academic Senate. It was seconded and approved by a unanimous vote: 17 for, 0 opposed, and 2 abstentions.

The students are the ones going through the program now and have a valid base for deciding the relevancy of such a program and the resolution against it. Note that the engineering council is made up of all majors.

It would thus seem that the students are concerned. It does not directly affect us, but it shall affect our reputation and the potential enrollment of our children.

There are thousands of reasons why a student could fall out of this schedule and be dismissed or delayed. An elitist system assumes ideal financial stability. Ideal emotional, mental, social and familial stability are also assumed. I know that Jim Harris hates the term, but what else can be the longterm implication of this program? We are a State School and therefore must consider all potential students. If they make it into the program it is because they earned it and therefore the University has the responsibility to make engineers of these people under reasonable time, financial, social, and academic constraints. This program will not do so in the student's opinion.

Implementing this system makes it a penal one, not a state-funded, education-for-all one. Again, students earned their way into Cal Poly and it is the University's, and yours as senators, to work with the students and not against them. Please vote not to implement this program.

Thank you for hearing the student voice,

Todd A. Reinart
Chair, Student Engineering Council