I. Minutes: (p. 2)

II. Communication(s)/Announcement(s):

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

IV. Consent Agenda:

V. Business Item(s):
1. Resolution to Establish the CIM Center-Carnegie, Chair of the Agricultural Engineering Department, Second Reading (pp. 3-15).
2. Resolution on Department Name Change for the EL/EE Engineering Department-Harris, Head, First Reading (pp. 16-19).
3. Resolution on Department Name Change for the Agricultural Management Department-Davis, Head, First Reading (pp. 20-25).
4. Curriculum Proposals (includes Budget Committee report, CE&B proposals, and catalog proposals)-Bailey, Chair of the Curriculum Committee, First Readings:
   SAGR (pp. 26-56)
   SAED (pp. 57-73)
   SBUS (pp. 74-84)
   SENG (pp. 85-107)
   SLA (pp. 108-142)
   SPSE (pp. 143-171)
   SSM (pp. 172-204)
   Cooperative Education (p. 205)
   Library (p. 206)
5. Curriculum Proposals (minors)-Bailey, Chair of the Curriculum Committee, First Reading (pp. 207-215).

**PLEASE RETAIN THIS AGENDA FOR ALL SUBSEQUENT SENATE MEETINGS. THE MATERIALS IN THIS PACKAGE WILL NOT BE REPRODUCED FOR SECOND READING.**

**IN ADDITION, PLEASE BRING YOUR 1988–1990 CATALOGS TO THIS MEETING AND ALL SUBSEQUENT MEETINGS. THANK YOU.**

VI. Discussion Item(s):

VII. Adjournment: time certain 4:55pm
Minutes for the May 23/May 25, 1989 meetings will be distributed at the June 6, 1989 Senate meeting.
RESOLUTION ON
PROPOSAL TO ESTABLISH THE CIM CENTER

RESOLVED: That the attached Proposal to Establish the CIM Center be adopted by the Academic Senate and recommended to the president for approval.

Proposed by:
See attached Proposal
Interested faculty
PROPOSAL TO ESTABLISH

A

COMPUTER INTEGRATED MANUFACTURING CENTER

at

California Polytechnic State University
San Luis Obispo

Submitted By

E. J. Carnegie, SAGR
Art Chapman, CAPC
Archie Cheda, SENG
Mark Clayton, SAED
Mark Cooper, SENG
Gerry Cunico, SPSE
Rob Grant, SBUS
Steve Hockaday, SENG
R. Krishnan, SBUS
Dan Levi, SPSE
Unny Menon, SENG
Saeed Niku, SENG
Jens Pohl, SAED
Ahmad Seifoddini, SENG
Chuck Slem, SPSE
Dan Woodlard, SAED
Ken Riener, SBUS

on behalf of interested faculty

April 1989
## TABLE of CONTENTS

<table>
<thead>
<tr>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time For Computer Integrated Manufacturing is Now</td>
<td>3</td>
</tr>
<tr>
<td>Purpose</td>
<td>3</td>
</tr>
<tr>
<td>Benefits to Cal Poly and Industry</td>
<td>4</td>
</tr>
<tr>
<td>Center Functions</td>
<td>4</td>
</tr>
<tr>
<td>Extension Programs</td>
<td>6</td>
</tr>
<tr>
<td>Training Programs</td>
<td>6</td>
</tr>
<tr>
<td>Development</td>
<td>6</td>
</tr>
<tr>
<td>Budget</td>
<td>6</td>
</tr>
<tr>
<td>Facilities</td>
<td>6</td>
</tr>
<tr>
<td>Organizational Chart</td>
<td>7</td>
</tr>
<tr>
<td>Bylaws</td>
<td>8</td>
</tr>
</tbody>
</table>
Proposal to Establish
A
Computer Integrated Manufacturing (CIM) Center
at Cal Poly, SLO

Time For Computer Integrated Manufacturing is Now:

American manufacturers and producers are subject to increasing competition in domestic and international product and service areas. Whereas in the past, American manufacturers had commanding market presence and control in these areas, today entire domestic product sectors are emaciated (steel production, optics, ore recovery), are unhealthy (electronic substrates), or are in continual jeopardy of succumbing to foreign competition (automobile manufacture, commercial aircraft manufacture). American industry is beginning to respond to competitive pressures in the face of evolving product and production technology. Also, lacking a strong management of technology program, many investments in technology (technology for the sake of technology) have failed.

In many cases, technology is changing so rapidly that industrial employees find themselves falling so far behind that they actively resist the introduction of new technology. Managing this technological change can help a company remain current; and an influx of graduates from existing degree programs, that have a contemporary education and exposure to current process technology, will provide a major vehicle for introducing and implementing necessary changes.

Departments in the various Schools at Cal Poly, SLO have made contributions to integrated manufacturing in areas of education, research, and development. Center participants will be uniquely able to contribute to computer integrated manufacturing because of the hands-on educational philosophy of Cal Poly. The nascent center is an asset eagerly anticipated by California and U.S. industry.

Computer integrated manufacturing is an engineering and management framework, formed to improve manufacturing process productivity through integration programs and integration technologies. In this respect CIM is a business methodology as well as an engineering discipline. The CIM Center at Cal Poly will serve the immediate needs of American industry by providing answers to specific problems and disseminating information. The center will serve the long range needs of industry by providing graduates with computer integrated manufacturing awareness and expertise.

PURPOSE:

Computer integrated manufacturing is an university-wide interdisciplinary endeavor. Efforts by individual faculty, and even orchestrated efforts by entire departments would not answer the current needs of the American manufacturing sector. The proposed Center will be an organizational vehicle to coordinate an industry-university partnership at Cal
The Center will serve as a common ground for the meeting of varied university resources and industrial opportunities. The Center will support the interdisciplinary needs of computer integrated manufacturing education and research, and will foster interaction between industry and the university, consistent with the goals of Cal Poly.

**BENEFITS**

**Benefits to Cal Poly**

The Center will provide a vehicle for:

- the interaction of students and faculty from varied academic backgrounds;
- the focusing of academic talent on pertinent industrial problems;
- allowing the substantial talents of the students and faculty to flower in areas of strength, and grow into new areas;
- the fostering of the "hands-on" experimental learning approach;
- more efficient and effective use of university facilities;
- stimulating research and development in CIM, and promoting education in CIM concepts;
- stimulating activity in the development of meaningful CIM curricula and promoting the permeation of CIM concepts into existing courses;
- promoting partnerships in the Industrial Associate and Graduate Internship programs;
- the cooperation, interaction, and sharing with other centers on campus.

**Benefits to Industry**

The Center will provide a vehicle for:

- the interaction of faculty and industry in the development of courses and workshops;
- improving the ability of companies to conceive of new products, and to deliver these products in a timely and cost-effective fashion;
- bringing industry needs and priorities to interested problem solvers;
- testing preliminary concepts and prototypes;
- sharing state-of-the-art technology with those most able to implement that technology;
- creating opportunities for professional development;
- finding graduates who can respond to the industry need for personnel familiar with computer integrated manufacturing, and who are willing to participate in its development and implementation.

**CENTER FUNCTION**
The proposed Center will be responsible for the coordination of CIM activities on the Cal Poly campus. The Center will obtain funds and provide direction for research, development and training in the computer integrated manufacturing arena. Specifically, the Center will endeavor to:

- provide research, development and training programs using state-of-the-art computer integrated manufacturing technologies;
- establish an Invited Lecture Series;
- provide short courses, conferences and workshops to practicing professionals and other interested groups;
- develop a visiting student and visiting professor program to strengthen the hands-on approach in CIM technology transfer;
- stimulate and promote collaborative relationships with similar groups at other universities;
- make modern equipment and state-of-the-art technology available to Cal Poly students.

Existing CIM activities include the campus IEEE Video Conference of May 1987, personnel loans by Northern Telecom, and relationships with the Consortium for Integrated Design and Manufacturing Education and the Institute for Manufacturing and Automation Research during the past two years. These activities have generated industry and government support, as follows:

- TRW Faculty Assistantship ........................................................................ $30,000
- IBM CAFE & DMIS Projects .................................................................... $50,000
- Northern Telecom University Interaction Program ................................ $80,000*
- DEC Electronic Manufacturing Project .................................................... $50,000
- Controlled Traffic Farming Project ........................................................... $200,000
- ICADS Project .......................................................................................... $300,000
- Menon NSF ILI Grant ............................................................................... $65,000
- Cheda NSF ILI Grant ................................................................................ $42,000

* each year for past four years

In addition industry has demonstrated its willingness to loan key personnel for extended periods of time. (Andrew Young, Northern Telecom executive loan program).

A listing of some major educational, research and development activities that could be conducted within the framework of the proposed Center follows. The unique expertise of Cal Poly personnel, and their dedication to the "learn by doing" ideal provide for a singular capability. A synergistic expansion of this capability will accompany growing industrial involvement.

### Extension Programs

Short courses and seminars will include discussion topics such as Process Planning,

Training Programs

Training courses will be based on particular laboratory or computer facilities including Expert Systems, Simulation, Networking, and Programmable Controller Applications.

Development

Development includes identification and solution of integration problems in computer-aided design, manufacturing, and management.

BUDGET

The operating budget of the proposed Center will be closely aligned to the evolving level of industry support. While initial funding levels may not allow the employment of any staff, it is expected that eventually the Center will generate adequate funds to support the following operational expenses:

- Director ................................................................. 0.5 time
- Manager ................................................................... $80,000
- Administrative Asst. .............................................. $40,000
- Technician ............................................................... $60,000
- Operating Expenses .............................................. $50,000

All support for this budget will come from industrial subscription, gifts, and loans from industry. No state funds are being requested.

FACILITIES

Computing and laboratory facilities exist within academic departments and within Information Systems. The distributed environment includes computer-aided design laboratories in Mechanical Engineering, Civil and Environmental Engineering, Engineering Technology, and the Computer Aided Productivity Center, manufacturing laboratories in Engineering Technology and Industrial Engineering in the School of Engineering, and Industrial Technology in the School of Professional Studies and Education as well as computing laboratories in the School of Business. The Schools of Agriculture and Architecture and Environmental Design will also be involved. SLONET and other campus communication networks provide the means to link these diffuse facilities together without physical reorganization.

Space needed for sponsored computer-integrated manufacturing projects, as required, could be accommodated within existing facilities. As industrial subscription increases, a new laboratory will be established.
CIM CENTER ORGANIZATION

PRESIDENT

VICE PRESIDENT
UNIV. RELATIONS

VICE PRESIDENT
ACADEMIC AFFAIRS

VICE PRESIDENT
INFO. SYSTEMS

ASSOC. V.P.
RESEARCH

CIM CENTER
DIRECTOR**

FACULTY STEERING
COMMITTEE ***

STAFF

INDUSTRIAL ADVISORY
BOARD

FACULTY,
STAFF, &
STUDENT MEMBERS

** THE CIM CENTER DIRECTOR
IS THE CHAIR ELECTED FROM
AND BY THE FACULTY
STEERING COMMITTEE

*** THE CIM CENTER
FACULTY STEERING
COMMITTEE TO BE
ELECTED FROM AND
BY THE CIM FACULTY

**** DOTTED LINES INDICATE CHANNELS OF COMMUNICATION ONLY AND NOT DIRECT ADMINISTRATIVE RESPONSIBILITY

CIM CENTER FACULTY STEERING COMMITTEE
BYLAWS OF THE CIM CENTER

California Polytechnic State University, San Luis Obispo

These bylaws are applicable within the authorization established by the Board of Trustees of The California State University and the California Polytechnic State University, San Luis Obispo.

ARTICLE I - NAME

The name of this organization shall be the Computer-Integrated Manufacturing Center (CIM Center), referred to in these bylaws as the CIM Center or the Center.

ARTICLE II - PURPOSE AND POLICIES

Section 1 - Purpose

The primary purpose of the CIM Center is to support the multi-disciplinary needs for CIM education and applied research. The Center will foster interaction between the University and industry, consistent with the overall goals of Cal Poly.

Center members are faculty, adjunct faculty, staff, and students who have a declared interest in CIM related activities at Cal Poly.

The CIM Center will serve as a vehicle for securing industrial sponsorship and support to sustain CIM oriented projects at the Center.

Section 2 - Policies

The policies of this Center shall be in harmony with the policies of The California State University, the California Polytechnic State University, San Luis Obispo, and the California Polytechnic State University Foundation.

Section 3 - Distribution of Excess Funds

For sponsored CIM projects, unallocated excess indirect costs will be returned to the project's Principal Investigator and Administrative Unit as designated in the project approval document and in accordance with university policies.

Section 4 - Dissolution

In the event the Center is dissolved, financial assets remaining after payment of or provision of, all debts and liabilities shall be distributed to the California Polytechnic State University Foundation in trust for Cal Poly.
ARTICLE III - MEMBERSHIP

Section 1 - Class of Membership

Only faculty, adjunct faculty, students, and staff of the California Polytechnic State University, San Luis Obispo, shall be members of the Center. The membership is defined as follows:

a. - Faculty and Adjunct Faculty

Faculty members are those persons appointed by the University to faculty rank.

b. - Staff

Staff members are those persons serving the University in either an instructional or non-instructional capacity who do not hold faculty rank.

c. - Student

Student members are those persons engaged in study at the University on either a full-time or part-time basis.

Section 2 - Admission to Membership

a. - Eligibility

Membership is available to all interested faculty, students, and staff. Voting rights are restricted to faculty members.

b. - Acknowledgement of Membership

The Director of the Center shall maintain the current list of members.

Section 3 - Term of Membership

Membership shall be renewable every two years by written request of the member.

Section 4 - Fees and Dues

There shall be no fees or dues paid by members.

Section 5 - Role of Members

Members are encouraged to participate in the research and development activities of the Center. They may propose programs to be implemented by the Center. These programs will receive Center support as necessary and possible.
Members are expected to provide support to the programs of the Center and assist the Director in program development.

ARTICLE IV - ADMINISTRATION

Section 1 - Director

The Center will be administered by a Director who will be the elected Chair of the CIM Center Faculty Steering Committee. The term of election is two (2) years.

The Director will serve on a release-time or overload basis, subject to the availability of funds. The amount of time will vary from quarter to quarter and will depend on available funds and anticipated work load for the particular quarter. The Director will report to the Associate Vice President for Research, Faculty Development, and Graduate Studies and will have the prime responsibility for the development and direction of the Center.

Section 2 - Annual Report

By May 31st, the Director will submit an Annual Report to the Associate Vice President for Research, Faculty Development, and Graduate Studies with copies to the Vice President for Academic Affairs, the Vice President for University Relations, the Vice President for Information Systems, the Deans of the Schools, the Industrial Advisory Board, and the members of the Center.

The report will include a summary of the past year's activities, a plan of the proposed Center activities for the following year, a proposed budget for the next fiscal year, and a financial statement and balance sheet. Included as an appendix will be a collection of abstracts of completed, in progress, and proposed projects.

The director will meet at least annually with the Deans' Council to report on progress and discuss issues and policies with respect to the CIM Center's activities.

ARTICLE V - STEERING COMMITTEE

Section 1 - CIM Center Faculty Steering Committee

There shall be a CIM Center Faculty Steering Committee of seven members. The committee will elect from its membership a Chair who will serve as Director of the CIM Center. The Chair serves at the pleasure of the committee and will vote only in the case of a tie.

Section 2 - Election of the CIM Center Faculty Steering Committee

Membership of the CIM Center Faculty Steering Committee is apportioned as follows: One general member from the School of Professional Studies and Education, two general members from the School of Business, two general members from the School of
Engineering, a facilities coordinator member from the School of Engineering, and one general member from the other schools. All current members of the CIM Center are entitled to nominate and vote for representatives from their own school, except that CIM Center members from the Schools of Agriculture, Architecture and Environmental Design, Liberal Arts, and Science and Mathematics are entitled to nominate and vote for the one representative from their schools. The term of election is two (2) years.

Section 3 - Meetings

The CIM Center Faculty Steering Committee will meet at least quarterly to review Center programs and to set the policies of the Center. The Committee may elect to meet for special purposes at any other times upon agreement of a majority of members or by request of the Director.

Section 4 - Number Constituting a Quorum

Five members shall constitute a quorum.

ARTICLE VI - INDUSTRIAL ASSOCIATION

Section 1 - Industrial Advisory Board

An Industrial Advisory Board will be established, with membership limited to selected persons who are senior executives with companies that are supporting the activities of the Center through major grants and contracts. Members will be nominated by the CIM Center Faculty Steering Committee and recommended by the Director to the President for appointment for a three (3) year period.

Section 2 - Industrial Associates

A larger group of industrial personnel will be associated with the Center via involvement with the Center's research and development activities, short courses, conferences, and other activities. Any participation or expression of interest from an off campus person will be cause for inclusion in the Center's list of Industrial Associates.

ARTICLE VII - FISCAL POLICIES

Section 1 - Fiscal Year

The fiscal year shall correspond to that of the Cal Poly Foundation.

Section 2 - Accounts and Audit

The books and accounts of the Center shall be kept by the Cal Poly Foundation in accordance with sound accounting practices, and shall be audited annually in
accordance with Foundation policies.
Section 3 - Funding

Funding for the Center shall come from privately solicited sources, gifts, grants, overhead
sharings, industrial membership fees, and fees from Center generated short courses,
conferences, and publications.

ARTICLE VII - AMENDMENTS

The Bylaws may be amended by a two thirds majority of the CIM Center members entitled
to vote, subject to the approval of the President. Each member shall receive an advanced
notification of the proposed amendment.
WHEREAS, the Electronic and Electrical Engineering Department requested a name change to the "Electrical and Computer Engineering Department" as documented in its memo of May 10, 1989 from James G. Harris, Head, via Peter Y. Lee, Dean of the School of Engineering, to Malcolm Wilson, Vice President of Academic Affairs,

WHEREAS, the Computer Science Department which jointly administers with the EL/EE Department the Computer Engineering Program by its motion of May 2, 1989 does not oppose said name change, and

WHEREAS, the proposed name is particularly appropriate for the degree programs that it administers and the subject matter of its curriculum, be it

RESOLVED, that the name of the Electronic and Electrical Engineering Department be changed to the "Electrical and Computer Engineering Department" with due haste, and for incorporation into the 1990-92 University Catalog.
MEMORANDUM

TO: Malcolm Wilson
Vice-President of Academic Affairs

cc: Charlie Andrews, Chair
Academic Senate
Roger Camp, Chair
CSC Department
EL/EE Faculty

VIA: Peter Y. Lee, Dean
School of Engineering

FROM: James G. Harris, Head
EL/EE Department

DATE: May 10, 1989

SUBJECT: Request for Departmental Name Change

The EL/EE Department in its meeting on May 9, 1989, voted to change its name from the "Electronic and Electrical Engineering Department" to the "Electrical and Computer Engineering Department". The vote was 22 in favor, 2 against, and 0 abstentions.

On a subsequent vote, it was unanimously decided to implement the name change with due haste. The reason for this haste is the hope to include the new name in the 1990-92 catalog. The Computer Science Department, in response to consultation with the EL/EE Department on a possible EL/EE name change, in its meeting of May 2, 1989, passed the following motion: "The Computer Science Department feels that the name of any particular department is primarily the business of that department." The Dean of the School of Engineering also has indicated his support of the name change.

This name change is more representative of the programs supported by the department, and Attachment 1 indicates a number of variations for the names of departments which support our programs. This representative list seems to indicate a consensus on the proposed name.

The name change to Electrical and Computer Engineering is particularly appropriate since (a) the EL/EE Department administers, together with the Computer Science Department, the Computer Engineering degree program and (b) both Electronic Engineering and Electrical Engineering majors take courses in and emphasize digital computer techniques of logic design, computer processor (microprocessor) design, digital signal processing, digital communication systems, digital control systems, digital image processing, computer programming, and computer aided design.

We appreciate your support in expediting this request. If you have any questions, please do not hesitate to call.

Attachment
Prompted by the recent discussions concerning departmental names, I thought it of interest to see the names used by the other CSU and UC campuses as well as those of adjoining states. I am not attempting to draw any conclusions, but am sharing this with you as an informational item. You will note the high entropy of this information. (From March 1989 issue of Engineering Education.)

Cal Poly (Pomona)
   Electrical and Computer Engineering
   (no Computer Science listed in Engineering)

Cal State (Fullerton) - School of Engineering and Computer Science
   Electrical Engineering/Systems Engineering
   Computer Science

Cal State (Long Beach) - School of Engineering
   Electrical Engineering
   Computer Science and Engineering

Cal State (Los Angeles) - School of Engineering and Technology
   Electrical and Computer Engineering
   (no Computer Science listed in Engineering)

Cal State (Northridge) - School of Engineering and Computer Science
   Electrical and Computer Engineering
   Computer Science

Cal State (Sacramento) - School of Engineering and Computer Science
   Electrical and Electronic Engineering
   Computer Science
   (Note: Computer Engineering is listed as a division with a coordinator)

[Cal State Chico and Cal State Fresno were not listed.]
UC (Berkeley) - College of Engineering
  Electrical Engineering and Computer Sciences
  (Computer Science Division is listed with an associate chair)

UC (Davis) - College of Engineering
  Electrical Engineering and Computer Sciences

UC (Irvine) - School of Engineering
  Electrical Engineering
  (no Computer Science in Engineering)

UC (Los Angeles) - School of Engineering and Applied Science
  Electrical Engineering
  Computer Science

UC (San Diego) - Division of Engineering
  Electrical and Computer Engineering
  Computer Science and Engineering

UC (Santa Barbara) - College of Engineering
  Electrical and Computer Engineering
  Computer Science

ADJACENT STATES

Arizona (Tucson) - College of Engineering and Mines
  Electrical and Computer Engineering
  (no Computer Science listed in Engineering)

Arizona State - College of Engineering and Applied Sciences
  Electrical and Computer Engineering
  Computer Science

Nevada (Reno) - College of Engineering
  Electrical Engineering/Computer Science
  (under one department head or chair)

Nevada (Las Vegas) - College of Engineering
  Computer Science and Electrical Engineering

Oregon State - College of Engineering
  Electrical and Computer Engineering
RESOLUTION ON
DEPARTMENT NAME CHANGE FOR THE
AGRICULTURAL MANAGEMENT DEPARTMENT

WHEREAS, The Agricultural Management Department has requested a name change to "Agribusiness Management Department" as documented in its memo of May 22, 1989 from M. LeRoy Davis, Head, via Lark Carter, Dean of the School of Agriculture, to Malcolm Wilson, Vice President for Academic Affairs; therefore, be it

RESOLVED: That the Academic Senate support the request for department name change from Agricultural Management Department to Agribusiness Management Department.

Proposed By:
Agricultural Management Department
May 23, 1989
MEMORANDUM

DATE: May 22, 1989

TO: MALCOLM WILSON
    VICE PRESIDENT FOR ACADEMIC AFFAIRS

VIA: LARK CARTER, Dean
     SCHOOL OF AGRICULTURE

FROM: M. LeRoy Davis, Head
      Agricultural Management Department

SUBJECT: REQUEST TO CHANGE NAME OF DEPARTMENT

I. REQUEST

The Agricultural Management Department hereby requests that the name of the department be changed to the AGRIBUSINESS MANAGEMENT DEPARTMENT.

II. JUSTIFICATION AND HISTORY

The term "agribusiness management" better describes what we are about -- educating managers for the agribusiness industry. This is what we have been doing for the last twenty years.

The words "agribusiness" and "agribusiness management" are widely understood whereas, the words "agricultural management" are not. Cal Poly has been using the term "agricultural management" since 1968 to have the same meaning as "agribusiness management". However, the term "agricultural management" has not gained wide acceptance and understanding.

The term Agribusiness is said to be a blend of agriculture and business. John H. Davis and Ray A. Goldberg are noted as the first to coin the term agribusiness. It was published in their text, A Concept of Agribusiness in 1957 at Harvard University. Davis and Goldberg suggested that agribusiness included all of the agricultural industry. In a more recent publication (1985) Goldberg suggests that "Agribusiness is the single most important sector of the world economy."
In fact, the term "AGRIBUSINESS" is now defined by Webster's Dictionary as a combination of the producing operations of a farm, the manufacture and distribution of farm equipment and supplies, and the processing, storage, and distribution of farm commodities. Sonka and Hudson describe the agribusiness sector as a sequence of interrelated activities made up of genetics and seed companies, input suppliers, agricultural producers, merchandisers and first handlers, processors, retailers, and consumers. Supporting these activities are firms which provide services, financing, and research and development to support the activities within the sector. The sector also includes international trade with substantial levels of imports and exports.

The most widely used introductory level textbook in this field, entitled Agricultural Economics and Agribusiness by Cramer and Jensen, states that agribusiness involves businesses that produce and distribute food and fiber to consumers. It includes farms, credit and supply firms, marketing, processing, distribution, restaurants, and retailers.

Agribusiness has evolved from a changing environment in agriculture. Today's modern agriculture industry is much more than farming or ranching. Jensen and Pope indicate structural changes in U.S. agriculture have resulted in a reduction in scope of the on-farm agricultural-production sector and a greater reliance on purchased technology in the form of service capital and intermediate inputs. That greater reliance on agribusiness firms has translated into agribusiness contributing 20 percent to the U.S. GNP and employing 23 percent of all those working. This indicates a symbiotic relationship between the agribusiness sector and other economic sectors. It has been said that agribusiness may be viewed as a complex of firms and institutions that make up a country's food and fiber system. As such, agribusiness is, therefore, the business process of organizing, directing, and controlling the transfer of inputs and outputs to respective participants in the agriculture industry.

As further proof that the term AGRIBUSINESS has gained national acceptance and understanding is the fact that there is now a professional journal entitled Agribusiness, An International Journal, edited by Michael Woolverton from Arizona State University, and published by John Wiley and Sons. There is also a Agribusiness Education Development Project funded by the U.S. Department Of Agriculture and the Lincoln Institute for Land Policy in Cambridge, Massachusetts. Out of this project has come a National Agribusiness Education Steering Committee and a National
Agribusiness Education Commission. I am a member of both of these organizations and represent the non-land grant universities.

The descriptions of agribusiness management listed above is the definition the Agricultural Management Department has been using to describe it's market niche since the Department was first given that name in 1968 by Dr. Edgar Hyer. However, the term "agricultural management" connotates management of the production areas of agriculture such as animal science, crop science, dairy science, etc. This has been misleading to our prospective students and their parents. We have had students ask us where the "Ag. Business Department" is located indicating that they weren't interested in the "Ag. Department", thinking that we were a production agriculture department. Changing our name to the more clearly understood AGRIBUSINESS MANAGEMENT DEPARTMENT would solve this problem. Our focus and mission would not change. We would still have our focus on the decisions and actions of the managers within the agribusiness sector. Our educational efforts would still be aimed at improving the performance of decision makers within the agribusiness sector.

There are several unique characteristics about the agribusiness sector as listed by Sonka and Hudson that set it apart from other business sectors. These include:

1. The unique cultural, institutional, and political aspects of food and fiber production, both domestically and internationally.

2. The uncertainty arising from the biological basis of crop and livestock production.

3. The alternative goals and forms of political intervention across subsectors and between nations in an increasingly global industry. These issues include environmental concerns, health and food safety, and labor.

4. Institutional arrangements that place significant portions of the technological development process in the public sector.

5. The differing competitive structure existing within and among the subsectors of the agribusiness sector, i.e., many farms resembling the purely competitive economic model, cooperative business structures, marketing orders, etc.
These characteristics require, not only the normal business skills required of all managers, but, some special managerial skills and knowledge for efficient and effective decisions. It is crucial that these managers understand production agriculture and the characteristics that set agribusiness apart from other sectors in the economy.

III. SUMMARY

The Agricultural Management Department was formed in 1968 when the Farm Management and Agricultural Business Management Departments were combined. Dr. Edgar Hyer, the acting department head, coined the name for the new department in a way that would keep both faculties happy. In about 1972 the name of the two majors were changed to a common major, Agricultural Management. The Department feels that it is time to change the name to the more readily understood --Agribusiness Management Department with a major in Agribusiness Management. This is a small change but one that we feel will help us better market our program to prospective students and parents and to market our graduates to the agribusiness industry. Thanks for your cooperation.
REFERENCES


School of
AGRICULTURE

Table of Contents

1. Budget Committee Report
2. GE&B Proposals
3. Catalog Proposals
<table>
<thead>
<tr>
<th>Course</th>
<th>WTU</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ag Management</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. Ag Engineering</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. Ag Education</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4. Animal Sciences</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5. Crop Science</td>
<td>+5.1</td>
<td>.14</td>
</tr>
<tr>
<td>6. Dairy Science</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7. Food Service/Nutrition</td>
<td>+3</td>
<td>.083</td>
</tr>
<tr>
<td>8. Natural Resources</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9. Ornamental Horticulture</td>
<td>+1.4</td>
<td>.04</td>
</tr>
<tr>
<td>10. Soil Science</td>
<td>-1.7</td>
<td>-.04</td>
</tr>
</tbody>
</table>

**Total:** 8.0
# Enrollment in Master Programs

**Fall 1965**

<table>
<thead>
<tr>
<th>DEPT</th>
<th>REQUIRED</th>
<th>ENG COURSES PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE MATHEMATICS</td>
<td>50</td>
<td>501, 502</td>
</tr>
<tr>
<td>AREA</td>
<td>20</td>
<td>221</td>
</tr>
<tr>
<td>CSPO</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Construction Eng</td>
<td>30</td>
<td>370</td>
</tr>
<tr>
<td>Structural Eng. Mng. -PhD - MEng</td>
<td>30</td>
<td>301, 304</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>251</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>251</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>251</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>601</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>602</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>606</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>606</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>606</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>606</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>606</td>
</tr>
<tr>
<td>Earthquake Res</td>
<td>125</td>
<td>570, 571, 570</td>
</tr>
<tr>
<td>AERO PROGRM</td>
<td></td>
<td>531, 531</td>
</tr>
<tr>
<td>C ARMY ENGR.</td>
<td>0</td>
<td>531, 531</td>
</tr>
<tr>
<td>ELECT</td>
<td>5</td>
<td>531, 531</td>
</tr>
<tr>
<td>COMPUTER SCIENCE</td>
<td>64</td>
<td>-</td>
</tr>
<tr>
<td>MS IN ENGINEERING</td>
<td>99</td>
<td>- DELETE 531</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>580</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>580</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>580</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>580</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>580</td>
</tr>
</tbody>
</table>
Issues Raised during the Review of the 1990-92 Catalog Materials

1. An overall increase in the number of units required for courses (per course) was noticed. An increase in the number of courses throughout the university has occurred. Almost all of the increases come in upper division and graduate offerings.

QUESTIONS:
What effect does offering a variety of courses have on scheduling, course enrollments, graduate plans of study?

2. There was a shifting of units in some curricula from lower to upper division. This put curricula in violation of CAM (6 units in major minimum during freshman year; 9 in sophomore year). Adjustments were made in major and support courses to satisfy CAM.

QUESTIONS:
Should CAM be modified? Should all majors have the minimum number of 100- and 200-level courses as required by CAM? Should support courses be shifted to satisfy CAM?

3. Requests were made to drop graduate standing as a prerequisite for 500-level courses or to add senior standing. OASIS can only discriminate a "standing" for course enrollment. The Curriculum Committee attempting to promote the spirit of the recently approved Resolution on Graduate Programs, retained graduate standing as a prerequisite for 500-level courses and did not recommend senior standing.

QUESTIONS:
What is the degree level of students populating graduate courses? Should seniors be allowed to take graduate courses as part of their common elective pool? Should there be an upper limit to the number of undergraduates in a graduate course? If a course is being offered consistently at 500-level to seniors almost exclusively, should it be renumbered at the 400-level?

4. There were a number of new courses proposed at the upper division without prerequisites. The Committee felt that upper division courses should have definite prerequisites of coursework, upper division standing, or GE&B Critical Thinking or Writing skills or combinations of these.
Should all upper division courses have prerequisites? If so, what types of prerequisites are appropriate? If not, what objective standard distinguishes an upper division from a lower division class?

5. The Committee asked that "consent of instructor or department head" be retained on all project, COOP, internship, special problems courses. We felt that some degree of control was necessary for these courses.

QUESTIONS:
What degree of accountability and control should be retained during registration over project, COOP, internship and special problems courses?

6. The number of units for project, special problems, COOP, and internship courses varies greatly throughout the university. We can understand the need, for example, of having a 12 unit internship in order for a student to be able to maintain full-time student status while away from campus. However, we strongly suggested that only 6-8 units be applicable to a degree program from any one project.

Considerations: Supervised study has a high WDU ratio. There should be some limit to the number of projects that a student can be involved in in place of formal coursework.

QUESTIONS:
Should there be a limit to the number of project, COOP, internship units which are applicable to a major or degree program? If so, how many? If not, then how can we be assured that course work is of appropriate quality?

7. Restructuring of curricula involves the addition and deletion of support courses. We asked that support course departments be notified of such changes.

QUESTIONS:
When should support course departments be notified of impending additions or deletions? What is the role of the support course department in the revision process?

8. New programs (major, minors, concentrations, specializations) should have a mandatory review process to determine their progress and effectiveness. We suggest a time period of five years be allowed, from the time of formal institution of a program, for some initial feedback.
New Minors at Cal Poly

1. Title (Full and Exact)

2. Additional Minors Offered by Department

3. Department(s) Proposing Minor

4. Purpose:
   a) Skills student will acquire
   b) Supporting data for curricula & skills correlation
   c) Target audience (which major most likely to pursue minor)

5. Need:  
   a) Information and surveys on student interest and demands  
   b) Enhanced employment opportunity  
   c) National job advertisement
(See if other similar program available at Poly. See if students acquire license/accreditation.)

6. Curricula for proposed minor courses, prefix, title, units if other departments involved, indication of their support.

7. Courses to be Developed for Minor

8. Student Survey -- Anticipated Enrollment

9. Faculty Resources

9. Instructional Resources (library, space, etc.)

GUIDELINES:

* Competency in a secondary course of study.
* In contrast to concentration, stand alone; same academic review process.
* 24 to 30 quarter units, at least half upper division. 12 or more specified courses.
* Courses can be counted for GEB and for completion of "support" course units for the major and not for "major".
* Half of the required courses must be completed in residence.
* 2/3 of minor units to be graded A to F, except for mandatory CR/NC.
* Minimum GPA 2.0.
* Noted on students record card but not shown on the diploma.
ENROLLMENT IN MASTERS PROGRAMS
FALL, 1988

<table>
<thead>
<tr>
<th>DEPT</th>
<th>ENROLLED</th>
<th>NEW COURSES PROPOSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agr Ms</td>
<td>58</td>
<td>AE 529</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AE 531</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DPT 522</td>
</tr>
<tr>
<td>Arch</td>
<td>19</td>
<td>ARCH 537</td>
</tr>
<tr>
<td>CRP</td>
<td>34</td>
<td>CRP 589</td>
</tr>
<tr>
<td>Construction Mgt</td>
<td>0</td>
<td>CM 570</td>
</tr>
<tr>
<td>Structural Eng. Prog.</td>
<td>0</td>
<td>SE 501</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE 514</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE 515</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE 518</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE 558</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE 561</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE 562</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE 563</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SE 569</td>
</tr>
<tr>
<td>Business Adm</td>
<td>141</td>
<td>GSB 579</td>
</tr>
<tr>
<td></td>
<td></td>
<td>582</td>
</tr>
<tr>
<td></td>
<td></td>
<td>590</td>
</tr>
<tr>
<td>AERO ENGINEERING</td>
<td>2</td>
<td>AERO 523</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DELETE 525</td>
</tr>
<tr>
<td></td>
<td></td>
<td>526</td>
</tr>
<tr>
<td></td>
<td></td>
<td>527</td>
</tr>
<tr>
<td></td>
<td></td>
<td>545</td>
</tr>
<tr>
<td>C &amp;ENV. ENGIN.</td>
<td>3</td>
<td>CE 581</td>
</tr>
<tr>
<td></td>
<td></td>
<td>582</td>
</tr>
<tr>
<td></td>
<td></td>
<td>583</td>
</tr>
<tr>
<td></td>
<td></td>
<td>586</td>
</tr>
<tr>
<td>EL/EE</td>
<td>7</td>
<td>-0-</td>
</tr>
<tr>
<td>COMPUTER SCIENCE</td>
<td>54</td>
<td>-0-</td>
</tr>
<tr>
<td>MS IN ENGINEERING</td>
<td>27</td>
<td>DELETE 532</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IE 556</td>
</tr>
<tr>
<td></td>
<td></td>
<td>557</td>
</tr>
<tr>
<td></td>
<td></td>
<td>558</td>
</tr>
<tr>
<td></td>
<td></td>
<td>559</td>
</tr>
<tr>
<td>Course</td>
<td>Code</td>
<td>Credits</td>
</tr>
<tr>
<td>-------------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>ME COUNSELING</td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>ENGLISH (TEACHING)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDUCATION</td>
<td>172</td>
<td></td>
</tr>
<tr>
<td>HOME EC</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>PSY/HD (TEACHING)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO SCI</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>CHEM</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>COOP ED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG</td>
<td>515</td>
<td></td>
</tr>
<tr>
<td>ED</td>
<td>532</td>
<td>DELETE 527</td>
</tr>
<tr>
<td></td>
<td></td>
<td>528</td>
</tr>
<tr>
<td></td>
<td></td>
<td>532</td>
</tr>
<tr>
<td></td>
<td></td>
<td>533</td>
</tr>
<tr>
<td></td>
<td></td>
<td>534</td>
</tr>
<tr>
<td></td>
<td></td>
<td>541</td>
</tr>
<tr>
<td></td>
<td></td>
<td>548</td>
</tr>
<tr>
<td></td>
<td></td>
<td>554</td>
</tr>
<tr>
<td></td>
<td></td>
<td>563</td>
</tr>
<tr>
<td></td>
<td></td>
<td>570</td>
</tr>
<tr>
<td></td>
<td></td>
<td>586</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DELETE 511</td>
</tr>
<tr>
<td></td>
<td></td>
<td>525</td>
</tr>
<tr>
<td></td>
<td></td>
<td>528</td>
</tr>
<tr>
<td></td>
<td></td>
<td>536</td>
</tr>
<tr>
<td>PE</td>
<td>537</td>
<td></td>
</tr>
<tr>
<td>PSY</td>
<td>564</td>
<td>567</td>
</tr>
<tr>
<td></td>
<td></td>
<td>571</td>
</tr>
<tr>
<td></td>
<td></td>
<td>572</td>
</tr>
<tr>
<td></td>
<td></td>
<td>575</td>
</tr>
<tr>
<td>MATH</td>
<td>501</td>
<td>502</td>
</tr>
<tr>
<td>COOP ED</td>
<td>586</td>
<td>DELETE 588</td>
</tr>
</tbody>
</table>