



CAUFORNIA POLYTECHNIC STATE UNIVERSITY  
San Luis Obispo, California 93407  
ACADEMIC SENATE  
805.756.1258

MEETING OF THE ACADEMIC SENATE  
Tuesday, May 29, 2007  
UU220, 3:10 to 5:00pm

- 3:10 I. Minutes:  
Approval of minutes for the May 8, 2007 Academic Senate meeting (pp. 2-3).
- II. Communication(s) and Announcement(s):  
Year-end report from the Academic Council on International Programs (ACIP):  
(pp.4-5).
- III. Reports:  
Regular reports *[no reports]*:  
A. Academic Senate Chair:  
B. President's Office:  
C. Provost:  
D. Statewide Senate:  
E. CFA Campus President:  
F. ASI Representative:
- Special reports *[Please limit to 10 minutes or less]*  
3:15 President Baker--budget implications of the May revise.
- IV. Consent Agenda:
- 3:40 V. Business Item(s):  
A. Curriculum Proposal: New Degree Program for BA, Liberal Arts & Engineering Studies: Hannings, chair of Curriculum Committee, first reading (pp.6-15).  
B. Resolution to Approve Proposal for the Establishment of the Cal Poly Center for Global Automated Identification Technologies (poly GAIT): Freed/Opava, representatives for Poly GAIT, first reading (pp. 16-20).  
C. Resolution on Consolidation of Academic Senate United States Cultural Pluralism Subcommittee and Curriculum Committee: Executive Committee, first reading (pp. 21-22).
- VI. Discussion Item(s):
- 5:00 VII. Adjournment:

CALIFORNIA POLYTECHNIC STATE UNIVERSITY  
San Luis Obispo, California 93407  
ACADEMIC SENATE  
805.756.1258

MINUTES OF  
The Academic Senate  
Tuesday, May 8, 2007  
UU 220,3:10 to 5:00 p.m.

- I. Minutes: the minutes of April 17 were approved as presented.
- II. Communications and Announcements: Giberti announced President Baker's attendance at today's meeting.
- III. Regular Reports:
  - A. Academic Senate Chair: Giberti reported on his presentation at the Access to Excellence Summit on excellence in student learning.
  - B. President's Office: President Baker announced that he would attend the May 29 meeting to report on the May budget revise and its implications to Cal Poly.
  - C. Provost's Office: Durgin reported that Cal Poly has met its enrollment target for next year. The 2007-2008 pool includes a record number of National Merit and Hispanic Scholar applicants.
  - D. Statewide Senate: Foroohar reported that an organizational meeting with next year's officers is scheduled for Friday, May 11, in Long Beach.
  - E. CFA Campus President: Foroohar reported on behalf of Saenz that, of those voting on the contract, 97% voted to approve it. The next step is for the Trustees to meet on May 15 and approve the contract.
  - F. ASI Representative: none.
- IV. Special Reports:

Bill Plummer, chair of the Research & Professional Development Committee, reported that the committee was charged with conducting a best practices study of the campus. The committee's recommendations are available at:  
<http://www.calpoly.edu/-acadsen/Documents/R&PDCdraftRecommendations.pdf>
- V. Consent Agenda: nothing.

VI. Business Item[s]

- A. Resolution on Consolidation of Academic Senate Fairness and Student Grievance Boards [Executive Committee, second reading] This resolution abolishes the Student Grievance Board and transfers its responsibilities to the Fairness Board.

The following friendly amendment was approved:

RESOLVED: That these new procedures should permit a student to bring to the hearing a supportive advocate but not an attorney or legal advisor and be it further

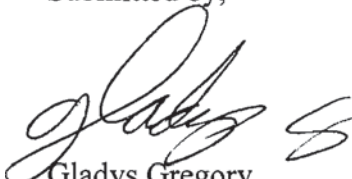
M/S/P to approve the resolution as amended.

- B. Resolution on Elimination of Academic Senate Faculty Dispute Review Committee [Executive Committee, second reading] This resolution abolishes the Faculty Dispute review Committee. M/S/P to approve the resolution.
- C. Curriculum Proposal: New Degree Program for BA, Liberal Arts and Engineering Studies [Curriculum Committee, first reading] Hannings reported that this interdisciplinary program is well supported by the colleges involved. Due to the lengthy discussion, this resolution will return as a first reading item at the May 29 Senate meeting.
- D. Resolution on Proposal for Establishment of the Cal Poly Center for Global Automated Identification Technologies [Poly GAIT] [first reading] Due to the lack of time, this resolution will return as a first reading item at the May 29 Senate meeting.
- E. Resolution on Consolidation of Academic Senate United States Cultural Pluralism Subcommittee and Curriculum Committee [Executive Committee, first reading] Due to the lack of time, this resolution will return as a first reading item at the May 29 Senate meeting.

VII. Discussion Item[s] none.

VIII. The meeting was adjourned at 5:00 p.m.

Submitted by,



Gladys Gregory,  
Academic Senate



Date: May 2, 2007

To: Cal Poly Academic Senate

From: John Battenburg  
Faculty Representative to the ACIP

Topic: 2006-07 Year-End Report of the Academic Council on International Programs

The CSU Faculty Representative to the Academic Council on International Programs (ACIP) is responsible for assisting the Office of International Programs in developing policies for international education, selecting and advising students applying to study abroad, and acting as a liaison between faculty, students, and administrators. As in previous years, I have been involved in the following activities: conducting interviews with faculty, staff, and alumni committee members and writing evaluations for students who have applied to International Programs, serving on international scholarship award committees, establishing policies for creating new programs or suspending existing programs, advising resident director applicants, and meeting with Cal Poly International Education and Programs staff about selection and orientation for students and faculty.

Various issues dealing with the ACIP are reported on below:

#### CSU IP Enrollment

- A total of 757 CSU students (out of 802) were accepted to CSU IP for 2007-08. The number of students accepted increased by over 10% in comparison to last year.
- A total of 73 Cal Poly students (out of 86) were accepted to CSU IP for 2007-08. Another 6 students are applying to study in Australia, New Zealand, and South Africa, which are on the southern hemisphere calendar.

#### Funding

- Operating expenses have increased by 12% (due to exchange rates, tuition costs, and rents) but funding for CSU IP has remained unchanged.
- Beginning in summer 2007, CSU IP has instituted a summer fee for preparatory language programs and orientations. A technology fee of approximately \$50 will also be charged to students in the Italy program. Finally, CSU IP is exploring having students pay a study abroad fee to offset some of the program costs. In addition to the new fees, CSU IP is applying for lottery funding as well as for CSU funding for budget shortfalls and program growth.

#### □ Tang Scholarship Recipients and Italy Resident Directorship

- Two Cal Poly students, Kelly Cheng and Ashely Reilley, have been selected as recipients of the Tang Family Scholarship for study abroad. Each scholarship is for \$4,000 and will assist in covering expenses for study through CSU IP in Taiwan.
- Alypios Chatziioanou, Cal Poly Chair and Professor of Civil and Environmental Engineering, will be the Resident Director in Florence, Italy for CSU IP in 2007-08.

#### Status of CSU International Programs

- A new program entitled Learn About Mexican Education and Teaching in Action (LA META) has been developed by CSU IP in cooperation with its Mexican partner university, ITESM in Queretaro. This program offers students preparation in Mexican language and culture as well as exposure to Mexican primary and/or secondary education. A total of 10 students who are considering teaching as a career have been accepted to LA META for 2007-08.
- The BCLAD Program in Mexico has again been suspended due to lack of enrollment in 2007-08.
- A new Learn Language in Spain Program is in the process of being developed by the ACIP. The language requirement for admission to this program would be one to three semesters of Spanish. Although criteria for site selection along with numerous sites were discussed, no decision has been made concerning the site location.
- CSU IP in Ghana will complete its first year of operation with 9 students. Health and safety issues have arisen and have been subsequently addressed. The CSU will continue to partner with the UC in Ghana.

#### ACIP Developments

- The ACIP adopted Guidelines for New Program Development proposed by the Academic and Fiscal Affairs Committee (AFAC). Such guidelines provide direction concerning program sites, areas of emphasis, use of resident directors, and funding issues.
- The ACIP voted to approve voting rights for CSU Coordinator Liaisons and to allow them to be selected as Chair of ACIP and Chairs of standing committees. A resolution to change the ACIP by-laws will be drafted and submitted to the CSU Trustees for their consideration.
- The ACIP continues to explore ways in which each campus representative can receive release time for their activities. The decision to grant an ACIP member release time, however, is made by the Academic Senate on each CSU campus.

This year I completed my two-year term as Chair of the Academic and Fiscal Affairs Committee (AFAC). I continue to be grateful to the Academic Senate for granting me four hours of release time to serve on the ACIP. Cal Poly plays a very important role in CSU IP with one of the highest enrollments of the 23 CSU campuses. In addition, Cal Poly sends the vast majority of students to Denmark and Italy through the Architecture program.

I am honored to serve on the ACIP and remain confident that study abroad through CSU IP is one of the most effective ways for Cal Poly students to pursue international education.

Cal Poly, San Luis Obispo  
Summary Statement of Proposed New Degree Program for  
Academic Master Plan Projection

1. Title of Proposed Program.

Bachelor of Arts, Liberal Arts & Engineering Studies

Brief description: This is an innovative interdisciplinary program that with a strong foundation in mathematics, science, engineering and liberal arts, enhanced by a global perspective experience. Students will integrate the planning, testing, evaluation and development work that underlies engineering studies with the creative expression, ethical investigation and aesthetics studies that form the core of the liberal arts. The BA LAES is being proposed as a five-year pilot program. The students will be internal transfers from the College of Engineering who are in good academic standing, but decide after the first year or two of their studies that an engineering career is not for them.

2. Reason for Proposing the Program.

This new degree is being proposed for two main reasons.

1) To prepare our student to address 21<sup>st</sup> century workforce concerns.

- The educational needs of society calls for graduates whose "exposure to science, mathematics, technology, and engineering during their undergraduate career is good preparation for 'a wide variety of societal roles; and that the nation will depend increasingly on a citizenry with a solid base of scientific and technical understanding' (Center for Science, Mathematics, and Engineering Education, 1996, pA)" From National Academy of Engineers, *Educating the Engineer of 2020*, 2005, p.35.
- Thus, the *SA in Liberal Arts and Engineering Studies* will prepare students for work in both local and global contexts in careers that require
  - o broad technical fluency, as well as an ability to examine and articulate the complex sociocultural, political and ethical aspects of issues upon which new public policy and legislation will be developed;
  - o integrated new media creation, production, distribution and evaluation in the information and entertainment industries, and the aesthetics of interactive systems design;
  - o technological product management, sales and training;
  - o various areas of technical communication (e.g., technical writing, public relations, patent law).

2) To increase retention among well-qualified freshman students admitted into the engineering program who find, early on, that although they have the aptitude, they no longer are interested in engineering as a career.

- Cal Poly has consistently lost a sizeable number of its engineering students during the Freshman and Sophomore years as these students, for various reasons, become disenchanted with traditional engineering study.
- Thus, the *SA in Liberal Arts and Engineering Studies* will

- o provide a new path for well-qualified CENG students who realize engineering is not their sole passion;
- o allow for efficient matriculation for students leaving CENG;
- o create opportunities for students to work on projects with a global emphasis and in multidisciplinary teams involving faculty and students from the CLA and CENG.

3. Anticipated Student Demand.

	Number of Students		
	<u>at initiation</u>	<u>3 years after initiation</u>	<u>5 years after initiation</u>
Number of Majors	35	105	120
Number of Graduates*	a	20	90

---

\*total number of graduates at 3 and 5 years after initiation

4. Indicate the kind of resource assessment used by the campus in determining to place the program on the academic plan. If additional resources will be required, the summary should indicate the extent of university commitment to allocate them and evidence that campus decision-making committees were aware of the sources of resource support when they endorsed the proposal.

Resource needs were estimated based upon the number of new courses proposed for the major and administrative and support costs to coordinate the running of the program during the pilot phase. Provost Durgin, Dean Noori, and Dean Halisky have agreed upon a plan of resource support to initiate the program.

5. If the program is occupational or professional, summarize evidence of need for graduates with this specific education background.

This program is *not* intended as an ABET-accredited engineering program nor is it intended for students interested in careers as professional engineers.

6. If the new program is currently a concentration or specialization, include a brief rationale for conversion.

Not applicable.

7. If the new program is not commonly offered as a bachelor's or master's degree, provide compelling rationale explaining how the proposed subject area constitutes a coherent, integrated degree major which has potential value for students. If the new program does not appear to conform to the Trustee policy calling for "broadly based programs," provide rationale:

The degree provides a niche area for Cal Poly that is not available at UCSB, UC-Davis, UCLA, UCSD, Stanford, Cal Tech, or Berkeley. The program is unique on this campus and to the CSU. No other program on campus or in the CSU combines the mathematical and scientific foundation of Engineering with advanced studies in the Liberal Arts.

Similar programs are successfully established at many schools that compete directly with Cal Poly for the same cadre of high caliber students. Universities that offer similar programs include:

Dartmouth University (AB., Engineering)  
Harvard University (AB., Engineering)  
Johns Hopkins University (B.A, Biomedical Engineering; B.A, Computer Science, B.A, Electrical Engineering, B.A, General Engineering)  
Lafayette College (AB. Engineering)  
Princeton University (AB. in Engineering and the Liberal Arts)  
Purdue University (B.S., Interdisciplinary Engineering)  
Rice University, (B.A, Electrical Engineering)  
Rochester Institute of Technology (B.A, Engineering Science)  
University of Arizona (B.A, Engineering)  
University of Rochester (B.A, Engineering Science)  
Worcester Polytechnic Institute (B.A, Liberal and Engineering Studies)  
Yale University (B.A., Engineering Sciences)

**8. Briefly describe how the new program fits with the campus mission statement.**

The **Bachelor of Arts in Liberal Arts and Engineering Studies**

- **looks** towards the future of the university as embodied in the revised mission statement:

Cal Poly fosters teaching, scholarship, and service in a learn-by-doing environment where students and faculty are partners in discovery. As a polytechnic university, Cal Poly promotes the application of theory to practice. As a comprehensive institution, Cal Poly provides a balanced education in the arts, sciences, and technology, while encouraging cross-disciplinary and co-curricular experiences. As an academic community, Cal Poly values free inquiry, cultural and intellectual diversity, mutual respect, civic engagement, and social and environmental responsibility.

- **affirms** Cal Poly's polytechnic orientation, while fostering a cross-disciplinary experience combining integrated coursework in engineering, science, and math with an integrated plan of study in the liberal arts.



BACHELOR OF ARTS IN LIBERAL ARTS AND ENGINEERING STUDIES -  
CURRICULUM DISPLAY

MAJOR COURSES

CHEM 124 Gen Chemistry for Engineering (83/84)*	4
ENGL 149 Technical Writing for Engineers (A3)*	4
LAES 301 Project-Based Learning in LAES	4
LAES 411 Collaborative Global Partnerships in LAES	4
LAES 461 Senior Project (or other approved SP course)	4
LAES 462 Capstone Senior Seminar in LAES.....	4
MATH 141,142 Calculus I, II (81)*	4,4
MATH 143 Calculus III (85)*	4
MATH 241 Calculus IV.....	4
MATH 244 Linear Systems or Advisor Approved Elective.....	4
PHYS 141 General Physics IA.....	4
PHYS 132, 133 General Physics	4,4
Engineering concentration (minimum 8 units at 300-400 level)	36
Liberal Arts concentration (minimum 12 units at 300-400 level)...	24**
STAT 312/321/350	4
Study Abroad or Global Perspectives courses (300-400 level)***.	4,4
Advisor approved elective	4
	128

GENERAL EDUCATION (GE)

72 units required; 20 units are in Support.

→**Minimum** of 12 units required at the 300-400 level.

Area A Communication (8 units)

A1 Expository Writing	4
A2 Oral Communication	4
A3 Reasoning, Argumentation, and Writing • 4 units in Major ..	0

Area B Science and Mathematics (4 units)

81 Mathematics/Statistics • 8 units in Major	0
82 Life Science	4
83 Physical Science* 4 units in Major ..	0
84 One lab taken with either a 82 or 83 course	
85 (requirement for Liberal Arts students only) *4 units in Major	0

Area C Arts and Humanities (16 units)

C1 Literature	4
C2 Philosophy	4
C3 Fine/Performing Arts	4
C4 Upper-division elective	4

Area *D/E* Society and the Individual (20 units)

D1 The American Experience (40404)	4
D2 Political Economy	4
D3 Comparative Social Institutions	4
D4 Self Development (CSU Area E)	4
D5 Upper-division elective	4

Area F Technology (upper division)

	4
--	---

52

ELECTIVES

	0
--	---

180

\* GE classes; In addition, one USCP course must be taken to fulfill Cal Poly graduation requirements.

\*\* Because this is a 180-unit degree, the Liberal Arts GE program, which requires upper division courses in Areas D (D5) and F, as well as an additional course in Area B (B5), is the appropriate GE template. In *most* Liberal Arts concentration options, *at least* 4 units will double-count in GE areas C or D at the upper or lower division level. See concentrations for more specific information.

\*\*\* A fall quarter/semester Study Abroad experience will be strongly encouraged for all students and efforts will be made to make sure that this is a viable and affordable option. Financial aid and scholarships may be available to support students who have completed the *Free Application for Federal Student Aid* (FAFSA) form. The International Programs Office already has in place several special affiliation agreements with a number of programs spanning a number of countries and continents, and will welcome the opportunity to pursue more such agreements as programs and needs are identified. For those students who cannot participate in the study abroad portion of the program, National Student Exchange or eight (8) units of integrated, upper division study in Global Perspectives may be selected from a list of approved electives, with an advisor's approval. Neither of these would meet the goals of the program as well, but have been identified as acceptable substitutes.

1) Students will select *one* Engineering Studies concentration from among the following (=36 units):

CSC - Computer Graphics Concentration (34 units)

- CSC 100 - Introduction to Computer Science (2)
- CSC 101 - Fundamentals of Computer Science I (4)
- CSC 102 - Fundamentals of Computer Science II (4)
- CSC 103 - Fundamentals of Computer Science III (4)
- CSC 141 - Discrete Structures I (4)
- CPE 129/169 - Digital Design, Digital Design Laboratory (3+1)
- CPE 229/269 - Computer Design & Assembly Language Programming, Laboratory (3+1)
- CSC 357 - Systems Programming (4)
- CSC 471 - Introduction to Computer Graphics (4)

Electrical Engineering - Power Concentration (34 units)

- EE 111/151 - Introduction to EE (2)
- EE 112 - Electric Circuit Analysis I (2)
- EE 211/241 - Electric Circuit Analysis II, Laboratory (3+1)
- EE 212/242 - Electric Circuit Analysis III, Laboratory (3+1)
- EE 255/295 - Energy Conversion Electromagnetics, Laboratory (3+1)
- EE 355/375 - Electromagnetics, Laboratory (4+1)
- EE 406 - Power Systems Analysis I (4)
- EE 407/444 - Power Systems Analysis II (4+1)
- Advisor approved power technical elective (4)

Industrial/Manufacturing Engineering - System Design Concentration (37 units)

- IME 101 - Intro Industrial & Manufacturing Engineering (1)
- IME 223 - Work Design and Measurement (4)
- IME 239 - Industrial Costs and Controls (4)
- IME 301 - Operations Research I (4)
- IME 303 - Project Organization and Management (4)
- IME 314 - Engineering Economics (4)
- IME 320 - Human Factors and Technology (4) GE Area F

IME 326 - Engineering Test Design and Analysis (4)  
IME 420 - Simulation (4)  
IME 443 - Facilities Planning and Design (4)

**Production Technologies Concentration (37 units):**

IME 101 - Intro to IME (1)  
IME 141 - Manufacturing Processes: Net Shape (1)  
IME 142 - Manufacturing Processes: Materials Joining (2)  
IME 143 - Manufacturing Processes: Material Removal (2)  
IME 156 - Basic Electronics Manufacturing (2)  
IME 223 - Work Design and Measurement (4)  
IME 241 - Manufacturing Process Design (4)  
IME 314 - Engineering Economics (3)  
IME 335 - Computer-Aided Manufacturing I (4)  
IME 336 - Computer-Aided Manufacturing II (4)  
IME 342 - Manufacturing Systems Integration (3)  
IME 418 - Product-Process Design (4)  
(ME 455 - Manufacturing Design and Implementation I (3)

**Product Development Concentration (36 or 37 units):**

IME 144 - Intro to Design and Manufacturing (4)  
IME 157 - Electronics Manufacturing (4)  
IME 303 - Project Organization and Management (4)  
IME 314 - Engineering Economics (3)  
IME 335 - Computer-Aided Manufacturing I (4)  
IME 357 - Advanced Electronic Manufacturing (4)  
IME 401 - Sales Engineering (2)  
IME 417 - Supply Chain and Logistics Management (4)  
IME 418 - Product-Process Design (4)  
IME 455 - Manufacturing Design and Implementation I (3) or IME 559 - Engineering R&D (4) or IME 577 - Engineering Entrepreneurship (4)

**Engineering Studies Independent Course of Study Concentration (ICS - 36 units)**

The Engineering Studies ICS Concentration allows students to pursue a course of study that has either depth or breadth. Because of the flexibility with the Engineering Studies ICS concentration, students will work closely with program advisors to develop an emphasis area, pairing appropriate engineering classes that cut across traditional disciplinary boundaries with a complementary Liberal Arts concentration. Some possible themes include:

- Digital Media
- Entrepreneurship
- Technology & Policy
- Global Development & Service Learning

Courses in the Engineering Studies ICS concentration may include any course offered by the programs listed below. A total of 36 units are required. The plan of study may include courses from one of these programs, or a combination. A total of 8 units must be at the 300-400 level.

- (BME) Biomedical Engineering
- (CPE) Computer Engineering
- (CSC) Computer Science
- (EE) Electrical Engineering
- (ENGR) General Engineering
- (IE) Industrial Engineering
- (MfgE) Manufacturing Engineering
- (MATE) Materials Engineering
- (SE) Software Engineering

Advisor approved courses in Math, Physics and Chemistry may also be included in the Engineering Studies ICS.

2) Students will also select one Liberal Arts concentration from among the following tracks (24 units):

Culture, Society, & Technology Concentration (24 units)

*Required Courses:*

ESfWS 350 - Gender, Race, ~~Science~~, & Technology (4) USCP

HUM 303 - Values & Technology (4) *or* PHIL 341 - Professional Ethics (4) *or* PHIL

337 - Business Ethics (4) All GE Area C4

POLS 451 - Technology & Public Policy (4)

*Advisor Approved Elective Courses (Select at least 3 from the list below):*

ANT 360 - Human Cultural Adaptations (4) GE Area 05

CaMS 317 - Technology & Human Communication (4)

GEOG 318 - Applications in GIS (3)

GEOG 333 - Human Impact on Earth (4)

*or* HUM 350 - The Global Environment (4)

HIST 354 - History of Network Technology (4) GE Area F

HIST 359 - Living in the Material World (4) GE Area F

JOUR 331 - Contemporary Advertising (4)

JOUR 470 - Selected Advanced Topics in Journalism (4)

PHIL 322 - Philosophy of Technology (4) GE Area C4

PHIL 340 - Environmental Ethics (4) GE Area C4

POLS 347 - Politics & Popular Culture (4)

PSY 311 - Environmental Psychology (4) GE Area 05

PSY 494 - Psychology of Technological Change (4)

Interactive Communication Concentration: Cinematic Focus (24 units)

*Required Courses:*

TH 210 - Introduction to Theater (4) GE Area C3

ENGL 411 - New Media Art I (4)

ENGL 371 - Film Styles and Genres (4) GE Area C4

*Advisor Approved Elective Courses (choose 3):*

ENGL 210 - New Media Technology (4)  
ENGL 370 - World Cinema (4) GE Area C4  
ENGL 372 - Film Directors (4) GE Area C4  
SCOM 311 - Communication Theory (4)  
SCaM 385 - Media Criticism (4)  
SCaM 419 - Media Effects (4)  
ENGL 412 - New Media Art 11(4)  
ENGL 416 - New Media Study (4)  
ENGL 417 - Advanced New Media Projects (2) (must be repeated)

**Interactive Communication Concentration: ,Theatrical,Fo.cus(24. units)**

**Required Courses:**

TH 210 – Introduction to Theater (4) GE Area 03  
TH 227 - Theater History: Classical (4) GE Area C3  
    or TH 228 – Theater History: 18th Century to Contemporary (4) GE Area C3  
ENGL 411 – New Media Art I (4)

*Advisor Approved Elective Courses: (Select 3 courses from the list below - with no more than 1 lower division course)*

ENGL 210 – New Media Technology (4)  
TH 220 - Acting Methods (4)  
TH 310 – Women’s Theater (4) or TH 320 – Black Theater 4 or TH 360- Theatre in the United States (4) or TH 390 - World Drama (4) All GE Area C4  
TH 230/330 - Stagecraft (4)  
TH 430 - Introduction to Stage Design: Scenery (4)  
TH 434 - Introduction to Stage Design: Lighting (4)  
HUM 320 - Values, Media & Culture (4) GE Area C4  
ENGL 412 - New Media Arts II (4)

**Technical Communication Concentration (24 units)**

*Required Courses:*

ENGL 317 - Technical Editing (4)  
ENGL 319 - Information Design & Production (4)  
CaMS 317 - Technology & Human Communication (4)

*Advisor Approved Elective Courses (choose 3):*

ENGL 210 - New Media Technology (4)  
ENGL 310 - Corporate Communication (4)  
HUM 303 - Values & Technology (4) GE Area C4  
PHIL 337 - Business Ethics (4) GE Area C4  
    or PHIL 341 - Professional Ethics (4) GE Area C4  
COMS 213 - Organizational Communication (4)  
CaMS 301 - Business and Professional Communication (4)  
ENGL 418 - Technical Communication Practicum (4)  
    or ENGL 420 - Client-Based Technical Communication (4)

**Publishing Technology Concentration (24 units)**

*Required Courses:*

GRC 101 - Introduction to Graphic Communication (3)

GRC 201 -- Electronic Publishing Systems (3)  
GRC 211 -- Substrates and Ink (4)  
HUM 303 - Values & Technology or PHIL 341 - Professional Ethics or PHIL 337 -  
Business Ethics (4) All GE Area C4

*Advisor Approved Elective Courses (choose 3-4 courses from the following for 24 units total):*

COMS 317 -- Technology & Human Communication (4)  
**GRC 316 -- Flexographic Printing Technology (3)**  
GRC 328 -- Sheetfed Printing and Platemaking (4)  
GRC 329 -- Press Methods and Procedures for Web Offset & Gravure (3)  
GRC 402 -- Digital Printing and Emerging Technologies in Graphic Communication

PSY 494 - Psychology of Technological Change (4)

**Liberal Arts Independent Course of Study Concentration (ICS - 24 units)**

Students choosing the Liberal Arts ICS Concentration pursue a course of study that meets their individual needs and interests. Courses are selected with the advice of the student's academic advisor and approved by the program chair.

*The Liberal Arts ICS Concentration must meet one of the following requirements:* ☐☐  
units of an advisor-approved integrated course of study selected from among courses offerings in the College of Liberal Arts, with at least half of the units at the upper division level OR an approved minor program in the College of Liberal Arts selected from among the following minors:

<b>MINOR</b>	<b>UNITS</b>
Art	30
Child Development	28-29
Communication Studies	28-29
Dance	30
English	28
LinQuistics	28
Ethnic Studies	24
French	24
German	24
Gerontology (PSY/CD)	28
Graphic Communication	26
History	30
International Relations (POLS)	28
Latin American Studies	28
Law & Society (POLS)	28
Music	30
ReliQious Studies (PHIL)	24
Philosophy	24
Psychology	28
Sociology	28
Spanish	24
Theatre	28

Values, Technology, & Society	28
Western Intellectual Tradition	28
Women's Studies	28

*Courses in the Liberal Arts ICS Concentration may double count with GE courses.*

Adopted:

ACADEMIC SENATE  
of  
CALIFORNIA POLYTECHNIC STATE UNIVERSITY  
San Luis Obispo, CA

AS- -07

RESOLUTION ON  
PROPOSAL FOR ESTABLISHMENT OF  
THE CAL POLY CENTER FOR GLOBAL AUTOMATED  
IDENTIFICATION TECHNOLOGIES □POLY GAIT□

- 1 RESOLVED: That the Academic Senate of Cal Poly endorse the attached proposal for
- 2 establishment of The Cal Poly Center for Global Automated Identification
- 3 Technologies □poly GAIT□

Proposed by: Industrial and Manufacturing Engineering Department  
Date: April 23, 2007



# CALPOLY

State of California  
**Memorandum**

**To:** Bruno Giberti, Chair  
Academic Senate

**Date:** April 9, 2007

**From:** William J. Durgin *WJD*  
Provost and Vice President  
for Academic Affairs

**Copies:** Susan Opava  
Tali Freed

**Subject: Request for Academic Senate Review of the  
Proposal for the Establishment of the Cal Poly  
Center for Global Automated Identification  
Technologies (poly GAIT)**

---

Attached is a copy of a preliminary proposal to establish the Cal Poly Center for Global Automated Identification Technologies (poly GAIT) in accordance with campus policy for the Establishment, Evaluation and Discontinuation of Centers and Institutes, this proposal received conceptual approval by the Academic Deans' Council at its meeting on April 2, 2007. I would now appreciate the Academic Senate's review of this proposal, if possible, prior to the close of Spring quarter 2007. Simultaneously an ad hoc committee, appointed by me, will review organizational and financial aspects of the proposed center. Please feel free to contact Dr. Tali Freed, industrial and Manufacturing Engineering Department, author of the proposal should you have any questions or would like her to make a presentation to the Academic Senate.

Thank you, and if you have any questions, please do not hesitate to contact my office.

Enclosure

# **The Cal Poly Center for Global Automated Identification Technologies (Poly GAIT)**

## ***Proposal to the California Polytechnic State University***

### ***Executive Summary for the Academic Senate Executive Committee***

May 1, 2007

Tali Freed  
Industrial and Manufacturing Engineering

#### **Purpose**

#### **Background**

##### **Purpose:**

We propose to grant Poly GAIT, the Cal Poly Laboratory for Global Automatic Identification Technologies, the status of a Cal Poly University Center. The Laboratory was founded in November 2004 by a group of faculty from several CP colleges interested in Radio Frequency Identification (RFID) and other methods of identifying and tracking objects. Such methods are used to prevent loss, theft, and counterfeiting; increase process efficiency; and provide traceability capabilities in cases of health-threatening disasters. Poly GAIT has been supported by the Dean of Research and Graduate Programs, Susan Opava, from its inception, as well as by Dean Wehner, Dean Noori, and Dean Christy. President Baker and interim provost Detweiler have also visited the lab and praised its energetic, multi-disciplinary, project-based learning and innovation.

Poly GAIT has been generously supported by industry, in cash and in-kind donations and project grants. A process developed in the lab has been submitted to the US Patent and Trademark Office for patenting, and several other innovative ideas are currently being developed into potentially patentable and commercially desirable products or processes.

Fifteen faculty from four Cal Poly colleges are actively working on Poly GAIT projects. There are also several hundred students from all Cal Poly colleges who have been trained in RFID courses, presentations, and projects.

Poly GAIT currently focuses on RFID research, however in the future we expect to expand into other areas, mixing process expertise and new technologies, such as biometric identification.

As a University Center the lab will have better structured administration, retain some of its grants overhead, and will be positioned to receive more funding from government and industry.

**Background:**

Radio Frequency Identification, or RFID, uses radio waves to automatically identify objects. This automatic identification method relies on storing and remotely retrieving data using devices called RFID tags, antennas, and readers. RFID tags are objects that can be attached or incorporated into a product, animal, or person. There are two types of RFID tags, passive and active. Passive tags have no internal power source, so tend to be smaller and cheaper. Active tags require a power source, however they tend to be more reliable and have a farther read distance and larger memories. The antenna enables the chip in the RFID tag to transmit the identification information to a reader. The reader then converts the radio waves reflected from the RFID tag into digital information that can be passed on to computers.

RFID technology is used in many everyday applications and the number and diversity of applications grows daily. For example, passports are being issued in many countries with RFID tags. Beginning in 2007, some new U.S. passports will include RFID technology. The RFID tags will store the same information that is printed on the passport as well as a digital picture of the owner. RFID tags are also used to track books in bookstores and libraries, pallets across supply chains, airline baggage, apparel and pharmaceutical items, as well as for door access control (e.g. CP Kennedy Library). Toll booths and bridges are using RFID for electronic toll collection (California FasTrak). Many large corporations expect RFID to improve their supply chain management. Wal-Mart and the United States Department of Defense started mandating their vendors to place RFID tags on shipments. These mandates impact thousands of companies worldwide. With the use of RFID progressing, research and development organizations in this field are in high demand.

Poly GAIT has been working with the RFID community on innovative research and development, while providing Cal Poly students with an exciting, hands-on learning environment. Poly GAIT has taken part in many student-led projects. See Appendix A for a full list. Many of these projects incorporate the very problems businesses are encountering when trying to produce and implement RFID systems; while some projects show new ways RFID can help certain industries. For example, CAFES and OCOB students and faculty are currently working on an RFID system for tracking livestock so that diseases can be quickly traced and eliminated. CLA Graphic Communication students are collaborating with CENG Electrical Engineering students to develop printable electronics. Some of the other areas of research being conducted at Poly GAIT are Warehouse Inventory Tracking, Asset Tracking, Door Access Control, Produce Traceability, Antenna Design, Automated Grocery Store Checkout, and Personalized Environment Control. RFID has many possibilities for the future and Poly GAIT hopes to be an integral part in the success of RFID technology and future Cal Poly graduates.

Poly GAIT efforts will focus on three primary activities:

- Education and Training
- Innovative Research and Development
- Solving Industrial Problems

The Poly GAIT laboratory at Cal Poly focuses on groundbreaking research and development that leads to innovative real-world solutions. Poly GAIT is dedicated to providing the best education

and training to students and industrial partners, and fostering collaboration among industry, government, and academia for the advancement of automatic identification technologies.

Few organizations have the resources and expertise to develop solutions exploiting the new opportunities and challenges of RFID technologies. An academic institution highly regarded in all aspects of engineering, business and agriculture is the perfect environment to develop prototype and demonstration systems. Cal Poly, with its strong polytechnic tradition of applied learning and problem solving, is ideally suited to undertake the various applied research challenges, multi-disciplinary investigations, solution development, testing, training, and implementation projects presented by the emerging RFID industry.

In addition to providing education and training, performing innovative research and development, and solving industrial problems, the Center plans to accomplish the following objectives:

- Partner with industry practitioners to develop innovative initiatives
- Enhance the interdisciplinary curriculum and supplement academic learning
- Augment faculty professional development and applied research opportunities
- Generate opportunities for faculty salary supplementation (fees for teaching Center courses, patent royalties, consulting)
- Improve graduating students employment opportunities and entrepreneurial initiatives
- Provide classes and projects to students from various disciplines interested in identification and tracking technologies
- Establish external funding for the Center's on-going activities
- Develop opportunities for student engagement in applied research
- Partner with and strengthen relationships among the different colleges and departments of Cal Poly
- Develop on-going relationships with other education institutions, research institutions and foundations

Adopted

ACADEMIC SENATE  
of  
CALIFORNIA POLYTECHNIC STATE UNIVERSITY  
San Luis Obispo, CA

AS- 07

RESOLUTION ON  
CONSOLIDATION OF ACADEMIC SENATE UNITED STATES CULTURAL  
PLURALISM SUBCOMMITTEE AND CURRICULUM COMMITTEE

- 1 WEREAS, The Academic Senate United States Cultural Pluralism (USCP) Subcommittee
- 2 was established in 1992 as a standing subcommittee of the Curriculum Committee
- 3 for the initial review of courses proposed to fulfill the Cultural Pluralism
- 4 baccalaureate requirement (AS-92-02); and
- 5
- 6 WEREAS, The USCP Subcommittee has in effect operated as a separate standing committee
- 7 with its own membership separate from the Curriculum Committee; and
- 8
- 9 WEREAS, The service culture of the University is best served by a committee structure that
- 10 **is** compact and robust; and
- 11
- 12 WEREAS, The curriculum process as it is currently defined is responsible for developing
- 13 recommendations regarding cultural pluralism as it relates to instruction; and
- 14
- 15 WEREAS, The existing USCP standards are well defined and the number of new course
- 16 proposals submitted to the USCP Subcommittee has dwindled (no new USCP
- 17 course proposals were submitted during 2006-07); and
- 18
- 19 WEREAS, According to the Academic Senate bylaws, the Curriculum Committee is
- 20 responsible for developing recommendations regarding cultural pluralism as it
- 21 relates to instruction; and
- 22
- 23 WEREAS, The Curriculum Committee already reviews all courses proposed for USCP credit;
- 24 and
- 25
- 26 WEREAS, Review of existing USCP courses can be carried out in the context of normal
- 27 program review; therefore be it
- 28
- 29 RESOLVED That the Academic Senate United States Cultural Pluralism (USCP)
- 30 Subcommittee be abolished; and be it further
- 31
- 32 RESOLVED That the Academic Senate Curriculum Committee assume the responsibilities of
- 33 the USCP Subcommittee effective immediately; and be it further

4 RESOLVED  That all references to the USCP Subcommittee be removed from the Academic Senate bylaws; and be it further

7 RESOLVED  That other University documents including websites shall be revised immediately to reflect this change.

Proposed by  Academic Senate Executive Committee

Date  May 1, 2007