Adopted: May 29 2012

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

AS-751-12

RESOLUTION ON PROPOSED NEW DEGREE PROGRAM: BACHELOR OF ARTS IN LIBERAL ARTS AND ENGINEERING STUDIES

WHEREAS, The College of Engineering (CENG) and t 1 he College of Liberal Arts (CLA) are jointly proposing the implementation of the Bachelor of Arts in Liberal Arts and Engineering Studies (LAES); and

WHEREAS, The Bachelor of Arts in Liberal Arts and Engineering Studies (LAES) has been functioning as a successful pilot degree for the past five years; and

WHEREAS, The Bachelor of Arts in Liberal Arts and Engineering Studies underwent a rigorous and successful program review, which indicated that the BA LAES is a worthwhile and rewarding program for Cal Poly students; and

WHEREAS, The LAES program, with the support of the College of Engineering and the College of Liberal Arts, now proposes to convert this degree program to permanent status; and

WHEREAS, The CENG and CLA Curriculum Committees carefully considered the proposal and recommended its approval; and

WHEREAS, The Academic Senate Curriculum Committee carefully considered the proposal and recommends its approval; and

WHEREAS, A summary of the proposal is attached to this resolution, with the full proposal available in the Academic Senate Office; therefore be it

RESOLVED: That the proposed degree program, Bachelor of Arts in Liberal Arts and Engineering Studies, be approved by Cal Poly's Academic Senate, and the proposal be sent to the Chancellor's Office for final approval.

Proposed by: Academic Senate Curriculum Committee
Date: May 9 2012

Cal Poly, San Luis Obispo
Summary Statement of Proposed New Degree Program for
Academic Senate

May 9, 2012

1. Title of Proposed Program.

Bachelor of Arts, Liberal Arts & Engineering Studies

Brief description: The Bachelor of Arts in Liberal Arts and Engineering Studies was originally proposed and then run as a pilot degree program to allow flexibility in developing the program and working out its idiosyncrasies as the first interdisciplinary, cross-college degree granting program before being sent forward to become a full part of Cal Poly's curriculum. The pilot program approach was taken with the Masters in Polymers and Coatings Science, a degree program that was successfully added to the regular Cal Poly curriculum in 2008.

The LAES program has been successful in creating a new avenue for students to pursue a STEM-related, interdisciplinary degree as they transfer from other, technical-based programs into a new line of study that gives them wider access to university offerings. This is an innovative interdisciplinary program with a strong foundation in mathematics, science, engineering and liberal arts, enhanced whenever possible by a substantive global perspective experience. Students integrate the planning, testing, evaluation and development work that underlies engineering studies with the study of creative expression, ethical investigation and aesthetics that form the core of the liberal arts.

2. Reason for Proposing the Program.

This degree is being proposed for **two** main reasons: **to meet workforce needs** and **to increase retention** of talented students.

A. Meeting Workforce Needs

First, a number of programs have been developed at other universities to **meet workforce needs** that indicate those trained in either traditional technological and liberal arts areas could benefit from some cross-pollination. Widespread student interest in technology and culture has led to the creation of these interdisciplinary programs that integrate traditional engineering studies with programs of study in the performing arts, humanities, ethics, history, politics, and culture. These new programs have been running successfully now at many schools that compete directly with Cal Poly for the same cadre of high caliber students. The Bachelor of Arts in Liberal Arts and Engineering Studies is a distinctive—and tested—solution that Cal Poly can offer to address these workforce concerns.

The following quote from the NRC-NSF convocation on Undergraduate Education exemplifies these concerns: "The needs of the work force are changing (American Society for Engineering Education, 1994; National Academy of Sciences, 1995). Rapid shifts in the labor market are creating a paucity of jobs in some areas and exciting new opportunities in others. This dynamism in the labor market is putting a premium on students who have a broad knowledge of different subjects, skills in synthesizing and communicating information, and the ability to work in teams. Students educated with a narrow disciplinary focus and in

solitary learning styles can have difficulties adjusting to such an environment. Indeed, such difficulties are a dominant theme in the complaints voiced by business leaders about contemporary under-graduate education." (National Research Council, pg.19)

Nearly 10 years later, in *Educating the Engineer of 2020*, the bachelor of arts in engineering is described as the "'liberal arts' degree for the twenty-first century. The traditional liberal arts degree was characterized as providing the knowledge, skills, and breadth of thinking to perform in leadership roles in government, industry, and more broadly, all aspects of society. As our everyday life becomes more driven by technology and the panoply of decisions that we must make regarding the use (or rejection) of technological solutions, understanding of the 'engineering approach' should likewise become more valued to all well-informed citizens." (National Academy of Engineering [NAC], 2005, pg. 46)

Successful Graduates

During the pilot period, the 22 students who graduated (by Fall 2011) from the LAES program were nearly all successful in entering the marketplace directly in the multidisciplinary fields toward which they were aiming their studies. Out of the additional 9 (estimated) students slated to graduate in Spring, 2012, nearly all have employment already lined up for them upon graduation. Every contact the program has had with its outside commercial partners during the pilot period confirmed that the type of cross-disciplinary training and curricular flexibility provided by LAES matches almost perfectly with the needs of multi-disciplinary industries. This matching of LAES training and design with commercial and marketplace requirements is evident in the recent surveys completed as part of the LAES program self study.

B. Retention of Talented Students

The LAES program has demonstrated that it **increases retention** among native 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. As noted in the LAES self study, the flexibility of the program's curricular structure, along with its direct connection with the engineering college, have been the key factors that have kept many current LAES students at Cal Poly. As noted by our external reviewers, LAES is, *"...highly successful at retaining passionate and talented students who are capable and interested in science and technology, but equally committed to artistic or cultural studies. The flexibility of the curriculum appeals to students who strongly value independence and the freedom to shape their own academic experiences; these students are an asset to the greater Cal Poly community and to the university reputation..."*

For a number of years, Cal Poly has lost a sizeable number of its engineering students during the Freshman and Sophomore years as these students, for various reasons, become disinterested with traditional engineering study. In general, these types of students have followed one of two pathways: transfer to other degree programs on campus or transfer to other universities that offer a more diverse collection of interdisciplinary programs, thereby allowing students to more easily integrate their interests in engineering and technology with their interests in arts and culture. The interdisciplinary approach to education provided by the LAES program, *"...offers a clear cross-discipline perspective through the requirement that students complete both an engineering and a liberal arts concentration. It also provides a powerful model of*

integrative learning and an emphasis on solving real-world problems in the four core LAES courses…"

For information purposes, IP&A's 6-year persistence data for first-time freshmen in engineering showed that for the Fall 2000 through Fall 2005 freshman-engineering cohorts (the most current data available), an average of 142 engineering students changed to majors outside of the college (with a high of 191 students for the 2001 FTF cohort and a low of 95 for the 2005 FTF cohort; the data do not specify to which majors they changed nor their level when they changed majors). In addition, more recent data show that 62 students in the 2009 FTF cohort left the university in either the freshman (n = 28) or sophomore (n = 34) year (these students were not disqualified), while another 43 changed majors outside of engineering in either the freshman (n = 10) or sophomore (n = 33) year. The consistent influx of students who have been drawn to the LAES program since inception, with only a minimal amount of program promotion, indicates that there is a strong and sustainable interest in this kind of program to ensure its continuing viability and (if resources allow in future) for its potential expansion.

Because the BA LAES utilizes course credits accumulated during the normal progression within the initial engineering major, coupled with required lower division GE courses taken in the first few quarters, the transition to the new BA LAES should be a much more efficient pathway to entrance (and graduation) for these internal transfers, thereby allowing for faster replacement of student positions in the participating engineering programs, while also increasing the graduation and retention rates for those same programs (as calculated by some, but not all indices).

Thus, this program is designed to meet the needs of talented students who are as equally interested in inventing and refining new technologies as they are interested with working directly in the arts and cultures of the communities that put these new technologies to use. Students nationwide have been enrolling in larger and larger numbers in innovative interdisciplinary programs.

3. Anticipated Student Demand.

At its maximum, the program will not, as presently configured ever enroll more than 45-55 students, all of whom will have been moved into the program through internal transfers.

	Number of Students			Totals	
	New Internal Transfers	Continuing Students	Yearly Graduates	Yearly Program Size	Total Graduates
Historical					
Spring 2008	7	0	0	7	0
2008-09 AY	16	7	2	25	2
2009-10 AY	13	21	4	38	6
2010-11 AY	11	30	14	55	20
2011-12 AY*	9	27	10	46	30
2012-13 AY*	12	26	12	50	42
Anticipated					
Year One*	12	26	12	50	54
Year Three*	15	25	15	55	69
Year Five*	15	25	15	55	84

*estimated

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 assessment was based upon the pilot. The resource needs of the program were reviewed by the curriculum committees, the associate deans, and the deans of the two colleges involved. Further discussion involving the provost also took place. As a result of these discussions, the following has been agreed upon:

To maintain the program at about 50 enrolled students, 44 units of assigned time will be allocated as follows: 22 units for program administration, development, and advising, ideally split between the two co-chairs (one from engineering, one from liberal arts) and 22 units of assigned time for providing instruction in the program. In addition, a .80 11/12 ASC provides administrative support, and there is an O&E budget of $11,000. Dean Larson (CENG), Dean Halisky (CLA), and Provost Enz Finken have all committed to long-term support of the program at this current level. Their MOU is attached.

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.**

California Polytechnic State University, San Luis Obispo is proposing the conversion of the **Bachelor of Arts in Liberal Arts and Engineering Studies** program from a pilot program to a permanent degree program in the Cal Poly curriculum commencing Spring 2013 based on its successful pilot and favorable program review.

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:**

No other CSUs offer a similar program. 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 (A.B., Engineering)
Harvard University (A.B., Engineering)

Johns Hopkins University (B.A., Biomedical Engineering; B.A., Computer Science, B.A., Electrical Engineering, B.A., General Engineering)
Lafayette College (A.B. Engineering)
Princeton University (A.B. 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)

Two unique aspects of the Cal Poly LAES program are its **project-based learning component** and the incorporation of a **global perspectives component** met through Study Abroad, National Student Exchange or the completion of 8 units of related coursework in global perspectives.

The **project-based learning component** is introduced in the first two courses students take as a major, LAES 301 – Project-Based Learning in Liberal Arts and its companion course, LAES 302 – Advanced Project Based Learning in Liberal Arts and Engineering Studies, which builds upon and refines the work students completed in LAES 301. Currently students take LAES 301 together with students taking LAES 302. These courses are offered every Fall and Spring and create a cohort of new LAES students who, through their project work in the class, come to understand the type of planning, collaboration, intellectual integration and cross-disciplinary design that is part and parcel of studies in the LAES program. Students taking LAES 302 additionally serve in a leadership and mentorship capacity to help out new students who are taking LAES 301 and entering the LAES program for the first time.

After completing the bulk of their studies from their chosen concentration areas, and often after completing their study abroad work, students then work through the final project-based learning courses in the LAES program, LAES 461 and 462. This two-course senior project development sequence provides students with the opportunity to carry out collaborative research arising from the questions central to each student's area of specialization and helps them to focus and vastly improve the quality of their senior project work, thus providing an effective summation of their undergraduate study. The capstone course (LAES 462) allows students to complete, present, discuss, share, refine and finalize the research and development work involved with their senior project or other projects.

The project-based nature of the program has been the primary means of interesting new students in the degree, but it has been the study abroad portion of the degree that has, for many students, proven to be the most compelling way to pull together their multi-disciplinary studies in the LAES program. This study abroad experience is designed to provide an opportunity for each student 1) to deepen his/her knowledge of how technology interacts with culture both at home and abroad; 2) to be a contributing member of an interdisciplinary, international team to work on, refine, or initiate a project; and 3) to reflect on one's own experience and the experience of others in this endeavor.

The LAES program provides students with a **global perspectives component** to their study ***best*** fulfilled by having students participate in one quarter/semester of a **study abroad experience**, with the further opportunity to work on an overseas research/development project during that time. The study abroad aspect of this program makes the program highly

competitive with many of the top interdisciplinary engineering, arts and sciences programs currently enrolling students around the country. Because of the importance of the study abroad experience, all efforts are made to make sure that this is a viable and affordable option for the students.

As our external reviewers noted, the study abroad and work/internship abroad components of the program contribute in large measure to the success of our graduates in the workplace. In their review of our student surveys, the external reviewers noted, *"Formal feedback from alumni has been limited, but alumni were included in a survey that focused on the international experience of the program. LAES alumni who responded did provide the following useful comments that highlight the value of this aspect of the curriculum:*

- *My internship abroad helped me get an internship in Haiti after I graduated!*
- *Cal Poly didn't have any Game Development courses, but the courses at QUT did. I was able to take advantage of the courses, and when I got back I was able to use the skills to find a job in the industry.*
- *My experience with an internship abroad had influenced my studies and brought me to where I am today. I learned skills that not only came into use at Cal Poly, but also in "real world" situations. After my internship I became more confident in my abilities and became optimistic for my career in the future. Over a year later, I continue to use the skills I learned that summer."*

In order for the United States to remain a leader in science and technology, an educated workforce is needed—capable of working in an international research environment and in a global market. By participating in study abroad, LAES students acquire the international experience they will need to compete in the job market, while at the same time gain valuable cross-cultural skills and, when relevant, learn another language. In addition, such international experience promotes flexibility, autonomy, leadership skills, innovation, maturity, ambition, and independence. It is the kind of high-level, first-hand overseas experience that many progressive and smart employers seek from new employees.

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

The Bachelor of Arts in Liberal Arts and Engineering Studies fits well with the university and college strategic plans/missions in that it

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

  Cal Poly fosters teaching, scholarship, and service in a learn-by-doing environment where students, staff, 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 comprehensive polytechnic orientation by fostering a cross-disciplinary experience combining integrated coursework in engineering, science, and math with an integrated plan of study in the liberal arts.

CURRICULUM DISPLAY

The BA:LAES is a 180-unit degree program distributed as follows:

Major Courses

LAES 301 Project-Based Learning in LAES	4
LAES 302 Advanced Project-Based Learning in LAES	4
LAES 461 Senior Project (or other approved SP course)	4
LAES 462 Capstone Senior Seminar in LAES	4
CHEM 124 General Chemistry for Engineering (B3/B4)*	4
ENGL 149 Technical Writing for Engineers (A3)*	4
MATH 141 Calculus I (B1)*	4
MATH 142 Calculus II (B1)*	4
MATH 143 Calculus III (B5)*	4
MATH 241 Calculus IV	4
MATH 244 Linear Systems	4
PHYS 141 General Physics 1A	4
PHYS 132 General Physics II	4
PHYS 133 General Physics III	4
STAT 312/321/350	4
Engineering Concentration (minimum 8 units 300-400 level)	34-35
Liberal Arts Concentration (minimum 12 units 300-400 level)	24
Study Abroad or Global Perspectives courses (300-400 level)	8
	126-127

General Education (GE)

72 units required; 20-32 of which are listed in Major, depending on concentration.
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)	
B1 Mathematics/Statistics *4 units in Major	0
B1 Mathematics/Statistics *4 units in Major	0
B2 Life Science	4
B3 Physical Science *4 units in Major	0
B4 One lab taken with either a B2 or B3 course	0
B5 Elective *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 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
Free Electives	**1-2**
	180

OTHER DEGREE REQUIREMENTS:
Cal Poly, Higher Ed, and Major GPA must all be at least 2.5

All students must complete:
United States Cultural Pluralism Requirement
Graduation Writing Requirement
60 units Upper Division (any 300-400 level classes)
Upper Division units in the Major: 48 required in the major out of 60 overall
Residency Requirements: See Degree Progress Report for details

* GE classes

** 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 an additional course in Area B (B5) is the appropriate GE plan of study. 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. 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. The International Education and Programs Office already has in place several special affiliation agreements with a number of programs spanning a number of countries and continents, and welcomes the opportunity to pursue more such agreements as programs and needs are identified.

Students choose both an Engineering Concentration and a Liberal Arts Concentration. These are chosen in consultation with the program directors to create areas of depth that are further developed in other areas of the program (e.g., study abroad, senior project).

Students will select *one* Engineering Studies concentration from among the following three concentrations (34-35 units):

CSC – Computer Graphics Concentration (34 units)
CSC/CPE 123 – Introduction to Computing (4)
CSC/CPE 101 – Fundamentals of Computer Science I (4)
CSC/CPE 102 – Fundamentals of Computer Science II (4)
CSC/CPE 103 – Fundamentals of Computer Science III (4)
CSC 141 – Discrete Structures I (4)
CSC/CPE 225 – Introduction to Computer Organization (4)
CSC 303 – Teaching Computer Science (2)
CSC/CPE 357 – Systems Programming (4)
CSC/CPE 471 – Introduction to Computer Graphics (4)

Electrical Engineering – Power Concentration (34 units)
EE 111/151 – Introduction to EE, Laboratory (1,1)
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 335/375 – Electromagnetics, Laboratory (4,1)
EE 406 – Power Systems Analysis I (4)
EE 407/444 – Power Systems Analysis II, Laboratory (4,1)
Advisor approved power technical elective (4)

Industrial/Manufacturing Engineering – System Design Concentration (34-35 units)
IME 101 – Intro Industrial & Manufacturing Engineering (1)
IME 223 – Process Improvement Fundamentals (4)
IME 239 – Industrial Costs and Controls (3)
IME 301 – Operations Research I (4)
IME 303 – Project Organization and Management (4)
IME 314 – Engineering Economics (3)
IME 319/320 – Human Factors and Technology (*GE Area F) (4)
IME 326 – Engineering Test Design and Analysis (4)
*IME 420 – Simulation (4)
*IME 443 – Facilities Planning and Design (4)

*Industrial and Manufacturing Engineering prerequisite MOU is in process.

Students will select *one* Liberal Arts concentration from among (or modeled after) the following (24 units):

Culture, Society & Technology Concentration (24 units)
Required Courses:
ES/WS 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 for a total of 12 units):
ANT 360 – Human Cultural Adaptations (4) GE Area D5
COMS 317 – Technology & Human Communication (4)
GEOG 318 – Applications in GIS (4)
GEOG 333 – Human Impact on Earth (4) or HUM 350 – The Global Environment (4) GE Area F
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 (*GE Area C4) (4)
PHIL 340 – Environmental Ethics (*GE Area C4) (4)
*POLS 328 – Politics of Developing Areas (4)
POLS 333 – World Food Systems (*GE Area F) (4)
POLS 346 – Politics in Literature (4)
POLS 347 – Politics & Popular Culture (4)
POLS 470 – Selected Advanced Topics (4)
PSY 311 – Environmental Psychology (*GE Area D5) (4)
PSY 494 – Psychology of Technological Change (4)

*Political Science prerequisite MOU located in Appendix 1, Letters of Support.

Interactive Communication Concentration: Cinematic Focus (24 units)
Required Courses:
TH 210 – Introduction to Theatre (4) GE Area C3
ENGL 371 – Film Styles and Genres (4) GE Area C4
ENGL 411 – New Media Art I (4)
Advisor Approved Elective Courses (Select 3 from the list below for a total of 12 units):
ENGL 210 – New Media Technology (4)
ENGL 370 – World Cinema (4) GE Area C4
ENGL 372 – Film Directors (4) GE Area C4
ENGL 412 – New Media Art II (4)

ENGL 416 – New Media Study (4)
ENGL 419 – Advanced New Media Projects (2) (must be repeated)
COMS 311 – Communication Theory (4)
COMS 385 – Media Criticism (4)
COMS 419 – Media Effects (4)
POLS 470 – Selected Advanced Topics (4)

Interactive Communication Concentration: Theatrical Focus (24 units)
Required Courses:
TH 210 – Introduction to Theatre (4) GE Area C3
TH 227 – Theatre History I (4) GE Area C3 or TH 228 – Theatre History II (4) GE Area C3
ENGL 411 – New Media Art I (4)
Advisor Approved Elective Courses: (Select 3 from the list below for a total of 12 units – no more than 1 lower division)
ENGL 210 – New Media Technology (4)
ENGL 412 – New Media Arts II (4)
TH 220 – Acting Methods (4)
TH 310 – Women's Theatre (4) or TH 320 – Black Theatre (4) or TH 360 – Theatre in the United States (4) or TH 390 – Global Theatre and Performance (4) All GE Area C4
TH 230– Stagecraft I (4)
TH 330 – Stagecraft II (4)
*TH 430 –Scenic Design (4)
*TH 434 –Lighting Design (4)
HUM 320 – Values, Media & Culture (4) GE Area C4

*Theatre and Dance prerequisite MOU located in Appendix 1, Letters of Support.

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 (Select at least 3 from the list below for a total of 10 units):
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 (3)
PSY 494 – Psychology of Technological Change (4)

*Graphic Communication prerequisite MOU located in Appendix 1, Letters of Support.

Technical Communication Concentration (24 units)
Required Courses:
ENGL 317 – Technical Editing (4)
ENGL 319 – Information Design & Production (4)
COMS 317 – Technology & Human Communication (4)
Advisor Approved Elective Courses (Select 3 from the list below for a total of 12 units):
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)
COMS 301 – Business and Professional Communication (4)

ENGL 418 – Technical Communication Practicum (4) or ENGL 420 – Client-Based Technical Communication (4)

Liberal Arts Individualized Course of Study (ICS – 24 units)
Students choosing the Liberal Arts ICS 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 must meet one of the following requirements: 24 units of an advisor-approved integrated course of study from courses offerings in the College of Liberal Arts designed to meet the LAES learning objectives, 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:

MINOR	UNITS	Required GE	Other GE
Anthropology-Geography	28	B2 (4), D3 (4)	Yes – D5
Art History	28	C3 (4)	Yes – C4
Asian Studies	28	D5 (4), C4 (4)	Yes – C3, D3
Child Development	28	C4 (4)	No
Communication Studies	28	–	No
Dance	30	C3 (4), C4 (4)	No
English	28	C1 (4); C4 (4)	No
Ethnic Studies	24	D1 (4), D3 (4), D5 (4)	Yes – C4
French	24	C1 (4)	Yes – C4
German	24	C1 (4)	Yes – C4
Gerontology (PSY/CD)	28	D5 (4)	No
Global Politics (POLS)	28	–	Yes – D5
Graphic Communication	26	F (4)	No
History	29	–	Yes – D1, D2, D3, D5
Latin American Studies	24	–	Yes – C1, C4, D3, D5
Law & Society (POLS)	28	–	Yes – D5
Linguistics	28	–	No
Media Arts & Technologies	28	–	Yes – C3, C4
Music	24	–	Yes – C3, C4
Philosophy	24	C2 (4), C4 (4)	No
Photography	24	–	Yes – C4
Psychology	28-29	D4 (4)	Yes – D5
Religious Studies (PHIL)	24	C4 (4)	Yes – D5
Sociology	28	D3 (4)	Yes – D5
Spanish	24	C1 (4)	Yes – C4
Studio Art	28	C3 (4)	Yes – C4
Theatre	28	C3 (4), C4 (4)	No
Values, Technology, & Society	28	C4 (4), F (4)	Yes – D5
Western Intellectual Tradition	28	C1 (4), C2 (4), C4 (4), D5 (4)	No
Women's and Gender Studies	24	D5 (4)	Yes – C4

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

State of California
Memorandum

CAL POLY
SAN LUIS OBISPO

To: Steven Rein
Chair, Academic Senate

Date: June 18, 2012

From: Jeffrey D. Armstrong
President

Copies: K. Enz Finken
E. Smith
M. Pedersen
D. Valencia-Laver
D. Larson

Subject: Response to Academic Senate Resolution AS-751-12
Resolution on Proposed New Degree Program: Bachelor of Arts in Liberal Arts and Engineering Studies

I am pleased to approve the above-entitled Academic Senate resolution. The proposal will now be sent to the Chancellor's Office for approval.

Please express my appreciation to the members of the Academic Senate for their attention to this important curricular matter.